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A TEXT BOOK
OF
PHYSICAL TRAINING
FOR SCHOOL BOYS.

By

S. C. CHATTERJI, B.Sc., L.T. (All.), M.Ed. (LEEDS),

AUTHOR

OF

*A Plea for Open Air Schools in India; Organization of
Physical Education for Schoolboys; Medical Inspection
of School Children; A Manual of Hygiene for
Teachers; Recent Educational Theories
and Development;
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COMPLIMENTARY

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PREFACE.

The importance of Physical Training to our community at large and more particularly to our school children is now becoming generally recognised all over India. No apology is, therefore, needed for the appearance of this book at this time treating, specially, the physical exercises of the younger members of our race. On account of want of adequate knowledge I regret this book is written for boys only; but I hope that in the course of a few years I shall be able to make a similar book for the other sex because the physical education of our girls and women, on whom rests the responsibility of bringing up our rising generation, is no less important than that of boys.

The subject matter in this book is, I admit, chiefly European. I have not tried in these pages to mix up Indian and Swedish system of exercises in the vain hope of getting an ideal system for our country. No doubt, the Indians of antiquity based their system of physical exercises on scientific grounds, but in the present form it is not suitable for children, having had little educational value. When the Indians formulated the system of physical exercises they had no conception of mass education and the exercises were, therefore, meant more for adults and particular sects *e.g.* pranayam for Brahmans, athletics for Kshatriyas, etc., than for school boys as a whole. On the other hand, the Swedish system of exercises, as invented by Ling of Sweden, does not only ensure all round development but with a slight modification can very effectively become a part of our school education.

In this book I have, consequently, made no attempt to amalgamate into one the two different systems—the Indian and the Swedish; I regard such a combination as very dangerous partly because I believe that one bad general is better than two good ones and partly because I am not sure what the secondary effects of certain Indian exercises are. I have, however, modified several Swedish exercises making them less strenuous and more varied to suit the conditions of our country. I have, at the same time, suggested that all the exercises must be done in India in open air all the year round with as few apparatus as possible.

Efforts have also been made to make this work as self-contained as possible. I have accordingly not only considered that all the parts of the body should proportionately develop, but have also included such open air activities as will develop intelligence and character. Part II dealing with the recreational activities of our youth has been added for this purpose.



(iv)

The gymnastic exercises which are selected in this book are primarily meant for school boys, but most of them are very suitable for persons of advanced age. I have seen that the majority of the school masters who come for training do not only enjoy the small games given in Part II but also take genuine interest in the performance of formal exercises. I am sure an adult reader will find these exercises more beneficial to his health than those advocated by Sandow or Muller.

Moreover, the exercises given in Chapter V of Part I have distinct corrective effects and although it is very difficult to cure, in an advanced age, any deformities either inherent or acquired in childhood, the exercises, if properly performed, will surely prevent them from getting worse. In certain cases when the defects are due to the accumulation of fat in the abdomen, distinct improvement is guaranteed in the course of a few weeks if the remedial exercises are taken regularly and systematically.

I, here, desire to acknowledge my obligations to Mr. R. Jarman, Organiser of Physical Education, the Education Committee, Leeds and his first assistant, Mr. Sidney Shaw for valuable help and suggestions. Thanks are also due to Mr. J. M. Ganguly, M. Sc., LL. B. for making necessary corrections in the proof sheets.

S. C. C.

Ajmer, March 1929.

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PART I.

GYMNASTICS.

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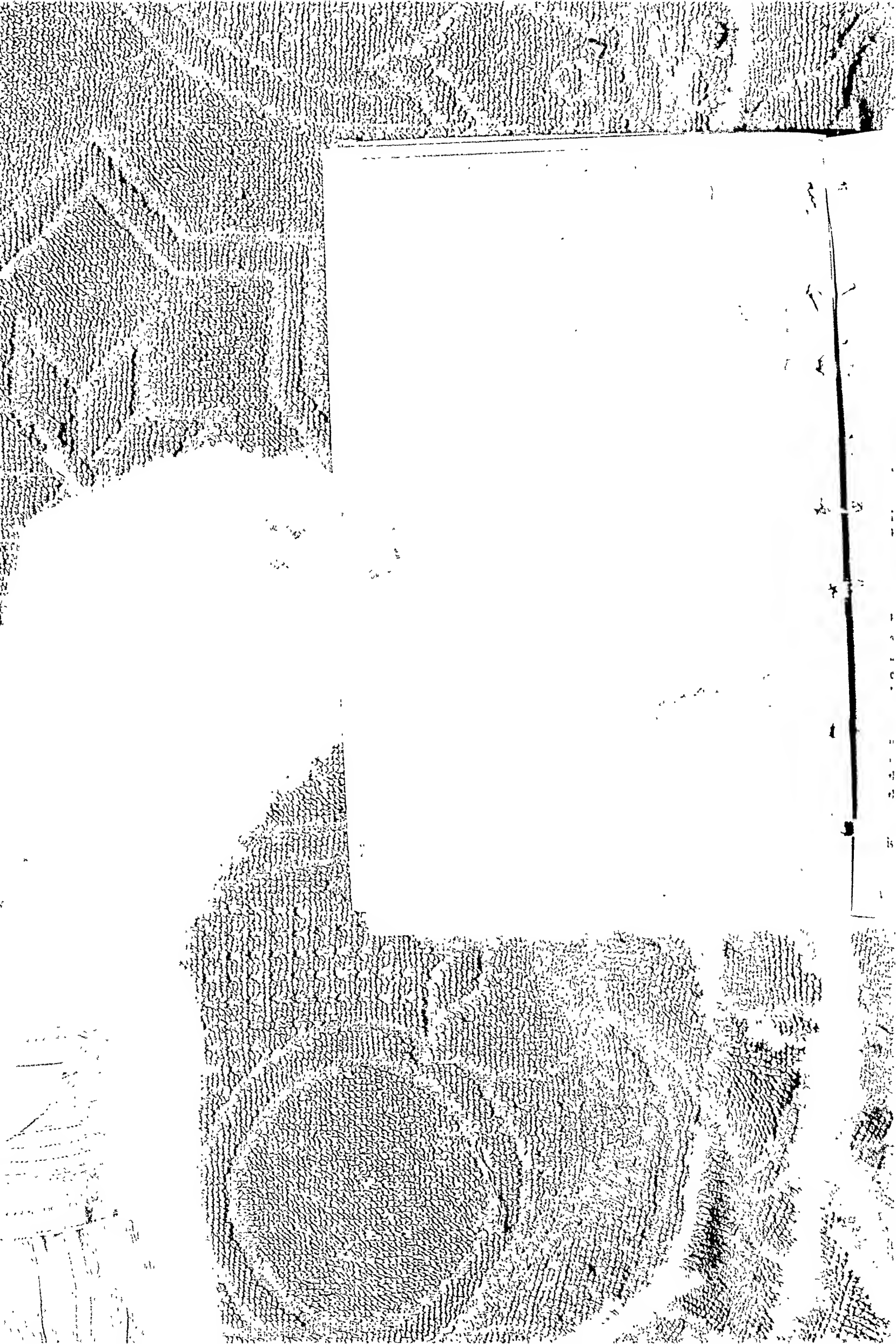
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PART I.

GYMNASTICS.

CHAPTER I.

Introduction.

When literally translated, gymnastics means the *naked art* and may now be briefly defined as systematic movements with certain aim in view.

Taking gymnastics in its broadest sense we may divide it into Educational, Remedial, Military and Æsthetic; but we are here chiefly concerned with the Educational or School Gymnastics.

The subject matter, we have dealt with in this part of our work, is based on the Swedish system of Educational Gymnastics and has been chiefly taken from Swedish and Danish books; but as this system, in its entirety, involves the use of considerable amount of fixed apparatus which most of our schools are not at present in a position to afford, the results of training in the complete system cannot be fully attained, nor can its efficiency be fully gauged.

But as, at the same time, the Swedish system is the embodiment of certain broad principles rather than of some specific movements which require a well equipped gymnasium to secure their aims, we are sure that with a little modification it will serve the basis of the scheme of physical exercise in Indian schools.

The object of school gymnastics, we have, here, dealt with is to promote both bodily and mental vigour by counteracting

the evil effects arising from the artificial way of living. No doubt, the straining of the muscles and the movements of the limbs are unnatural, but the conditions of modern civilisation with its crowded localities, confined spaces and sedentary occupations, demand artificial methods of correction. Gymnastics, if properly conducted in our schools, will reveal to us the following advantages :—

Exercises having a beneficial influence on the general physique produce a nutritive effect. Such exercises may be divided into general activity exercises, *e. g.*, games involving running, leaping etc., and special movements, *e. g.*, balance movements, shoulder exercises etc.

Restriction of movements, unnatural surroundings, unwholesome conditions and lack of suitable food, demand that the exercises should be so arranged that their evil effects are prevented as far as possible.

On account of various reasons good many children have got certain bodily defects, and unless care is taken such defects are apt to be intensified by the artificial conditions of school life. For instance, the "trunk movements" are most useful in assisting chest development and in strengthening the back and neck muscles in children who have round shoulders and flat ill-shaped chests.

In order to attain the highest possible degree of all-round physical fitness the development of the muscular system and the body as a whole is to be promoted. Gymnastics also has an equally important influence on the development and specialisation of the brain cells.

In the process of learning a variety of new movements and exercises, the memory is strengthened. As the exercises become more advanced there is an increasing demand on the powers of concentration and initiative

and also of endurance and determination. The constant call for self-control, for co-operation and harmonious working with others needed for performing physical exercises, helps to foster unselfishness and promotes public spirit which is valuable in after-life.

Gymnastics creates an interest in an individual enabling him to understand his own body, its structure and functions and to appreciate the folly of abuse in any form. It cultivates the correct form of control and, through interest and healthy occupation of body and mind, the child unconsciously acquires habit of discipline and order and learns to respond cheerfully and promptly to the word of command. Idleness is the road to wrong doing and if the child is healthily engaged in his physical exercise lessons, many an evil arising from inactivity will be removed.

Rightly taught, physical exercises should serve as a healthy outlet for the emotions while the natural power of expressing thought, feelings and ideas by means of bodily movements is encouraged and brought out. It is, therefore, an important task to awaken the sense of bodily beauty—the striving for which is an indispensable link in working for a good and healthy physical development of youth. This appeals to the æsthetic sense very considerably, for in learning to appreciate physical beauty in form and motion, the perception of all beautiful things is insensibly developed and the child gradually learns to seek beauty and proportion not only in his external surroundings, but also in the lives and character of those he meets.

CHAPTER II.

Method of Instruction.

The success in gymnastic lessons will, like other lessons, depend more on the manner of teaching than on subject matter. The lesson should be delivered in a natural tone and should be such as to rouse the interest of the pupils. The class must thoroughly enjoy the lesson or it fails to produce the desired physical result.

The main principles to be observed in teaching exercises may be grouped as follows :—

(A) PLAN IN TEACHING.

It is most important that the lesson the teacher is to give to his class should be well thought out. He should thoroughly prepare the lesson before he goes to the class to give it; the lesson must, on no account, be made in the course of his teaching.

Besides the plan for the day's work, there must be a plan of work for the year. The exercises must be arranged according to the different classes in the school. The classification suggested in the end of the chapter cannot be used, however, without alteration as climatic conditions vary from province to province and season to season. Should the teacher be given less time and is unable to finish his work during one school year, he should choose the most essential of his exercises rather than make an attempt to finish imperfectly. If he should be able to use more, he may increase the number of exercises by adding some taken from other places. In this way, every teacher should modify his own plan on the principle suggested in the progression of exercises.

Having selected the most essential points of the new exercise, the teacher should present them in the most effective way. The process resolves into two parts :—

- (i) **Explanation.** It should be as simple, clear and concise as possible and should be given with due deliberation. The simplest and most familiar language should be employed and no more should be said than is necessary to make the meaning clear. The commands for the exercise must be included in the explanation.

- (ii) **Illustration.** Exercises should be illustrated either by the teacher himself performing them or by causing a smart pupil to perform them. Most of the new exercises should, as a rule, be set by the teacher, but, in many instances, specially when the exercise involves "assuming positions" which are difficult to maintain while speaking or from which it is impossible to see the class, it is advisable to make one of the pupils do the exercises while the teacher explains the details.

In setting "free standing" exercises, the teacher should face in the direction which will best enable the class to see the particular positions or movements.

(B) CORRECTION OF FAULTS.

However clear the teacher's explanation and illustration may be, it is inevitable that some faults may be made by the class during the practice of exercise. If the performance of the exercise is allowed to become very faulty, the general result of the training will be lost. On the other hand, in the early stages of the training a high degree of precision cannot be expected. With very young children it is undesirable to insist on exact form; hence the exercises given should be of a special character. But whatever the class may be, the teacher should not be satisfied until the degree of accuracy appropriate to the age of the pupils and other circumstances, has been reached. In

deciding the question he will need to employ all his knowledge, experience and observation.

In order to correct faults effectively and quickly, the teacher needs to have a clear mental image of the correct forms of the exercises and be, at once, able to detect any departures from them. He must also know what to say and do in order to get them put right. In this he will be greatly assisted by a knowledge of the way in which the exercises produce their effects and the causes of the characteristic faults. Without this knowledge it will scarcely be possible to gauge correctly the relative gravity of different faults and there will be a strong inclination to pay more attention to relatively innocuous, but obvious faults than to those of far more serious consequence, but more difficult to detect.

Faults may be classified under two headings :—

1. *General Faults*, which may appear in any exercise at any stage of the training.
2. *Special Faults*, which are peculiar to the exercise that is being performed.

A few of the general faults which most frequently occur in a lesson are :—
General Faults. Faults of carriage due to incorrect base and bad position of head. Such movements as "feet closing and opening" or "head bending backward" two or three times, are usually sufficient to restore good carriage.

Holding the breath during the performance of an exercise is a fault most commonly associated with trunk movements, but with practice and repeated cautions "not to hold the breath" the children soon learn to breathe easily in all exercises. General lack of precision and firmness in the class when taking up a starting position is very often the fault of the teacher, or to some other influence attracting the attention of the class. In this case the movements should be repeated and the teacher could perhaps use a higher and firmer tone.

When a class is working in time or rhythm, they most likely fail to work together; so it is a good plan to let the class count for themselves, or the teacher could give the time by counting or clapping the hands.

It is important that the teacher should learn the characteristic faults of each exercise in order to be prepared to effectively make the necessary corrections. He should also know what fault is to correct first and at what time. Experience shows that there are many teachers who spend heaps of time on petty corrections, while the main faults are getting worse. Take for instance, the "reach position," the teacher sees one or two with their "thumbs up," and all the time he is correcting this fault the pupils are cramping their chest and dropping their heads.

The essence of correcting special faults, other than those arising from mere slackness, is the guidance of effort from the wrong into the right direction. Correcting is done either when the class is standing at ease, or while the class is performing an exercise.

For the correction of the faults of serious nature, the teacher must stop the exercise and make a detailed correction, possibly with an illustration of the fault. This method is more particularly used in the process of teaching an exercise and should only be needed when the exercise is imperfectly understood; its employment has the disadvantage of breaking the flow of the lesson.

There are many faults which can be put right while the work is in progress and this method has the virtue of saving time and avoiding the risk of tiring the class. In using this method the class must never be kept for any length of time in a strained position while faults are being corrected. The correction may be done either :—

- (i) by short directions and injunctions, or
- (ii) manually.

The short direction or injunction addressed to the whole class or to any individual is the usual method. It must be short and to the point and needs to be given with plenty of decision. To correct effectively in this way the teacher must know the right thing to say on each occasion, that is to say, he must know the kind of effort the pupils need to make in order to effect the correction. A correction of the essentials of an exercise will often prove a clue to the correction of its common faults. The method of correcting should never take the form of fault-finding, but on the contrary should be employed in an encouraging manner.

After the starting position for an exercise has been taken by the pupils, the teacher must allow him-self sufficient time to see that it is correctly taken before proceeding with the exercise. This is important, because the correctness of the exercise as a whole depends primarily upon the correctness of the starting position. It is needless to point out the importance of being able to run the eye round the class and see all that should be noted in the briefest possible time.

While commanding an exercise the teacher can walk through the lines and gently stretch an elbow or wrist, lift a head, press a shoulder down etc., without words. This method can only be applied effectively with a fairly advanced class. If well done it saves time and avoids distracting the attention of other pupils. But this method is only applicable to minor faults, small irregularities of position etc., and must never take the form of pulling a child about. No roughness or force must ever be used. The teacher must not dash about from one pupil to another, but should quietly place him-self where he is required.

The exhilaration and excitement of games, free jumping and similar exercises often render a class unsteady and a little inattentive when again formed up. The quickest and most pleasant way to fix the attention and re-establish full control is immediately to command some well-known exercise which requires a considerable degree of concentration for its proper execution, e.g. "Feet astride with arms upward, stretch," and so on.

(C).—COMMANDING.

As some of the faults are due to improper commanding we now proceed to discuss what a command should contain and how it should be given.

A command gives in the shortest possible form both what exercise is to be done and when it shall be done. It has, therefore, two parts; the directory word and the executive word.

The directory words give direction for what shall be done and how it shall be done. This part of the command

(i) **Directory word.** is given in a slightly higher tone than that of ordinary conversation. Each word should be pronounced correctly, distinctly and with emphasis on each syllable. The words should flow evenly and not be given in a jerky manner with pauses between the words. The way in which the words are said should indicate the character and speed of the movement.

The manner of delivering this word must indicate the speed of the movement desired. For a quick movement

(ii) **Executive word.** it is given sharply and generally on a slightly higher tone than is used for the directory words. For a slow movement it is given more smoothly and deliberately, but it should not be emphasised.

It is not sufficient, however, that the executive word should express the difference between very quick and very slow movements only. It must also express all of the many transitional

forms which lie between these two extremes. The difference in expression is necessary partly to teach the pupils the speed of the movement and partly to keep in training their sense of time and to prevent monotony in the commanding.

A pause is inserted between the two parts of the command in order to allow the pupils to prepare for the moment. If it is unduly curtailed specially in commands for very rapid movements, the pupils will not have time to concentrate their attention upon what they are to do, they will be taken by surprise and will not perform the movement with full effect.

The pause between the two parts of the command must not always have the same length. Sometimes, it should be shorter, sometimes, longer in order that the pupils may not know when the executive word is coming. If the pause is of the same length, the commands acquire a definite rhythm and the pupils fall in the habit of anticipating the executive word, specially if the pauses are habitually too short. This will result in slovenly and ill-controlled movements and the habit once formed is difficult to break.

When commanding young children and beginners the pause must generally be considered longer than that required for practical classes, because such pupils are unaccustomed to the rapid formation of definite motor ideas, and need a longer time in which to make the necessary preparation. The pause also needs to be lengthened for large classes.

Some exercises consist of two distinct movements for which only one command is employed, e.g., 'feet astride place, left turn!' When such exercises are being taught, it is desirable for the sake of control and correction that each movement should be commanded separately. For this purpose it is usual to employ additional executive words in the form of numbers, Thus :—

One Step forward—March 1 1—2.

Arms—Change ! 1—2.

benefit from it. The Gymnastic teacher must therefore possess all the professional skill for managing his class. He should see that the pupils form up for the lesson with the greatest possible speed and orderliness. A little time at the beginning of school year may be profitably employed in practising forming up in this manner. The class having "fallen-in", a moment is allowed for every one to settle to place and become perfectly quiet. Then the first order "stand erect" is given with all the energy and effectiveness of which the teacher is capable. This command marks the beginning of the lesson and should set the note for the whole. Everyone, teacher included, should hold the position for a moment before the work is proceeded with.

From the very beginning of their training the pupils should be taught to obey the command "stand erect" at all times with the utmost promptness and to hold the position with perfect steadiness and correctness until another command is given. It is, therefore, necessary to take great care that the pupils are never kept standing too long at erect position, otherwise lapses from the correct position due to fatigue will occur; nor should the pupils be allowed to correct their ailments in the class after being called to attention, or to make any other movement unless they receive special orders to do so. These and similar departures from the strict observance of the rule, if permitted, will destroy the significance of the command and lead to loss of control. It may, here, be said that before the class, the teacher should, at all times, hold himself correctly. The influence of his example in this respect is great. As regards the detailed correction of faults or the explaining of an exercise the teacher should stand the class at ease, but attention and certain degree of stillness must be maintained and to make sure of these teacher should begin his explanation directly the class has taken the "stand-easy" position.

The teacher's place is usually in front of the class where by look, word or gesture, he can most easily control the performance. Occasionally, however, he needs to change his position for

the better observation of an exercise or the correction of a fault. All such changes of position should be made with a purpose in view and without undue hurry. Nothing is more unsettling to the class than to have the teacher fidgeting aimlessly around it.

In general, it may be said that control becomes an easy matter if the class is kept actively employed throughout the lesson. The requisite pauses for rest must, of course, be given, but care should be taken that they are not unnecessarily frequent or prolonged, or attention will wander, the class will become restless, and control will be weakened.

In order to secure this continuity of work and interest, the lesson must have been carefully planned and committed to memory, otherwise it will inevitably drag and become a wearisome business for both the teacher and his pupils.

If the teacher has prepared his lesson he will be able to conduct it with a quiet confidence in which there is no place for uncertainty or hesitation, unnecessary repetitions or aimless floundering. The lesson will flow briskly, purposely and smoothly, from beginning to end with every detail, whether of rest or activity, in its right place and having its just proportion.

In conclusion, it may be said that although a knowledge of these principles and methods is indispensable for skilful teachers, yet technical expertness alone is not sufficient to render the teaching fully effective. The teacher needs to bring to his work all the energy, interest and enthusiasm which he possesses, and these he must communicate to the class. The success of his teaching will depend not so much upon what he does as upon the manner in which he does it, upon the *spirit* in which he conducts the lesson. While he must seek to acquire a complete mastery of the correct methods of procedure, until they become for him an unconscious habit, he must, at the same time, endeavour

to cultivate and perfect the qualities which convert the dry bones of technique into living and effective leadership.

(E) ADAPTATION OF EXERCISES TO DIFFERENT CONDITIONS.

It is not enough for a gymnastic master to know how to deliver his lesson and to control his class, he should also have an experience and knowledge of making his lessons suitable to climatic and other conditions.

India is a large country and the climate and social conditions are so different in different parts that it is not possible for us to suggest what type of exercises will be suitable to pupils in different seasons. We can only make certain observations on broad general principles dividing the school age for gymnastics as follows :—

1. Children aged approximately 6 to 9 years.
2. Children aged 10 and upwards.

Our children get no schooling at all before the age of 6 and simply run about in their homes or in streets. They thus make use of the whole body and do not concentrate their attention to any single group of muscles. Gymnastic lessons should very gradually make the change and must be in a natural continuation of the child's own free movements. They should, therefore, be given chiefly through games which give strong movements, e. g. running games, pulling games and games where they have to use their imagination. Among the various games must be inserted exercises which train the sense of time and exercises which claim attention—both of them must be taken in such a way that they retain something of the character of a game. There must be exercises which have an enlivening effects on the systems such exercises, consist of specially quick and strong movements or movements following quickly one after the other, e. g., "down on the back and up again." There must also be exercises which accustom the children to instant obedience—e. g., to stop a game immediately at a signal or a word of command.

It is, here, not possible for us to suggest a fixed scheme of work for the children of this age. The rule of beginning with easier exercises and taking the strenuous ones in the middle part of the lesson must still be adhered to. In the same way the games and specially the game-like exercises must be chosen in such a way that one sidedness is avoided and the body gets an all-round work.

The age of 10 and upwards is the time when athletic games should be introduced. The children can now advantageously do harder exercises and like them, but the teacher should be careful not to take too difficult exercises and stress must still be laid on jumping, vaulting and agility exercises. On account of rapid anatomical and physiological changes in the body, the children, at the age of puberty, lack considerably their mental balance and the power of endurance. Strenuous exercises should, therefore, be modified at this age.

There should be many more easy exercises than few and difficult ones. Exercises which may have a hampering effect on the circulation should be cautiously given. We do not, however, mean that exercises employing muscles of the thorax or abdomen should not be given: on the other hand, in this period of rapid growth the muscles of the trunk, arms and shoulders must have their proper amount of development. In fact it is at this age even more important than in other times that respiration should be continued during the exercise and that the atmosphere should be free from dust or other impurities.

The age of puberty is the last period of development and therefore, form-giving exercises are of great importance. Great stress must be laid on the choice of such exercises as without being too strenuous, are calculated to correct faults in carriage and also on the correct performance of the exercises. Marching and short running are also very suitable at this age, but strong jumping and hard agility exercises must not be given to the

pupils. When once the development is complete exercises which incline to strength, agility and athletic power may be given.

As regards the climatic conditions it is not possible to suggest anything definite. In some parts specially in Bengal and the coast strips bordering the sea, the climate is very equable and the exercises will not require great alteration in different seasons ; but, in the interior, the conditions are very different and the teacher should have the expert knowledge of selecting proper exercises for different seasons. The main hygienic principle must never be forgotten that whenever weather does not directly interfere, the exercises must be done in open air.

Our task of suggestion of the exercises for the rural children is equally difficult. Here again, the conditions are widely different. These children, no doubt, get more opportunities for being in the fresh air and are physically stronger, but on account of illiteracy of our country folk the general carriage of these children is often very bad. The teacher of a country school should select such exercises as would correct ungainly postures or clumsy movements, would encourage mental rather than muscular effort, would inculcate a sense of rhythm and teach good marching. Games should be chosen which call for alertness and offer opportunities for co-operation and for leadership.

Our country master will be confronted with another difficulty. He will have to handle children of varying ages and ability. It is thus impossible for him to make as much progress as when children are properly classified. He should remember that he is to judge his work by the way in which his pupils do the exercises. It is no reflection on himself or the children if they do not complete the whole scheme ; the underlying principle should ever remain that the work should never be lacking in freshness, interest and real physical value for all the children.

Passing now to the modifications necessary in the formal gymnastic table which we have discussed in our last chapter,

may add that time is not perhaps very distant when gymnastics will be used for body-building, corrective and remedial purposes, not as a means of mere exercise or recreation. They will be used for conditioning purposes, to put a child in proper condition to take part in sports, games and other activities to better advantage. Even then, their effectiveness will depend upon methods, content and tact of the gymnastic master. Attention is, hereby, called to the following general points to be observed in a lesson :—

1. Each movement should have a meaning.
2. Avoid rigidity and tenseness.
3. Do not hold position for any length of time.
4. Use constructive method and encouraging language.
5. Use such exercises as will provide wholesome activity for the various systems of the body—the circulatory, respiratory, digestive, excretory and nervous system.
6. The class should be dressed in appropriate costumes.

F. PROGRESSION OF EXERCISES.

Lastly, the gymnastic master should be fully conversant with the progressive order of exercises. He should clearly realize the fact that the interest in the gymnastic lesson does not only depend on the variety of exercises but also on a progression which means, in a word, increased difficulty. Therefore, in order to attain the desired educational value the gymnastic exercises must be delivered in a progression which demands greater and greater strength and co-ordination as the lesson develops.

The exercises will thus be progressive in :—

- A. The daily lesson.
- B. The year's work.
- C. The schoolwork as a whole.

The two fundamental rules for making up the daily lesson must be borne in mind. Firstly, the exercises are chosen for the different parts of the body and, secondly, the exercises are so arranged that there is an even increase in effort until towards the end of the lesson and then an even decrease.

The first main principle of "all roundedness" in the daily lesson is adhered to partly because exercises must develop all parts of the body and partly because one part of the body cannot continue the work for long at a time. Moreover, it has been observed that when one part of the body is working, the other parts of the body do not only get rest, but can do more work after a time than those parts could do, if absolute rest were given. For instance, if a child does "arms bending" ten times and takes fifteen minutes rest, he can perhaps do five more "arms bending"; but if he does other suitable exercises during the time of rest e. g. "knee bending and stretching" or "hopping on spots," he can do after that time perhaps seven more "arms bending." Thus by working first at one part of the body and then at another, the teacher will gain the advantage of being able to give the pupils a great amount of useful movements without danger of strain.

The second main principle of increasingly difficult tests for the growing strength and co-ordination is observed because at the commencement of the lesson the body is not prepared to do strenuous work. Therefore, some easy exercises involving the movements of large muscles of the body are to be given. Similarly, some easy exercises are to be given towards the end of a lesson to enable the body to cool down gradually. The daily lesson may, therefore, be divided as follows.

These exercises are preparatory to strong exertion demanded in the main exercises of the lesson. These are fairly easy exercises which must bring into play the large muscles of the body and must be performed accurately and simultaneously by the

(1) Introductory exercises.

class. They have thus very great disciplinary value. They should not, however, take more than a few minutes in half an hour's lesson and not more than six or seven minutes in 45 minutes' lesson. They may be classified as follows:—

1. Order Exercises.
2. An easy leg Exercise.
3. Neck Exercise.
4. Easy Arm Exercise.
5. One or two trunk exercises.
6. A fairly strong leg exercise.

These exercises form the most important part of the "table".

(2) Principal Exercises.

They give the strongest effect on the body, both as regards exertion and the forming of the body.

They are as follows:—

1. Span Bending.
2. Heaving Exercises.
3. Balance "
4. Lateral "
5. Abdominal "
6. Dorsal "
7. Agility "

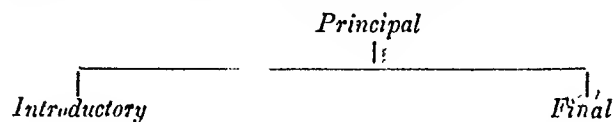
The final exercises should be most familiar ones and must not contain anything new. The pupils should be able to do these exercises comparatively easily and correctly. This part should be much smaller than the introductory portion of the lesson. These exercises may be regarded as follows:—

(3) Final Exercises

1. A fairly easy leg exercise.
2. A trunk "

- 3: A breathing-exercise;
4: Dismissal!

N. B.—These exercises may be shown graphically according to the time allotted to each as follows:



Besides these two main rules, there are other points which must be remembered in the delivery of a day's lesson. The movements chosen must harmonize with each other, in strength, form and co-ordination. For instance, easy exercises must not be chosen from one group and difficult ones from another. Moreover, they must be arranged according to their secondary effects, as exercises from one group may have different secondary effects; and exercises from different groups may have the same or at any rate very similar secondary effects.

Thus "a trunk bending backward," "a front hand-lying" and a "hanging high knee raising" are all abdominal exercises, but their bye-effects on the loin are very different.

As an example of the second case, we may maintain that a "front lying, trunk bending backward" and "deep span bending" belong to different groups of exercises; nevertheless, they have, in common, that secondary effect of involving a strong bending of the loin. Thus if those exercises were chosen for the daily lesson it would be conducive to the making of a hollow loin, and harm would be done. The various exercises chosen for the same lesson must, therefore, harmonise in such a way that in their secondary effects they counteract one another.

In other cases, similar secondary effects are not really harmful, but involve the continued use of certain muscle groups which are, therefore, disproportionately tired. If, for instance, the stretch position were used for several exercises in succession.

the arms and shoulders would be tired and the result would be that some of the exercises will be badly performed, since in the end, the muscles could not be exerted as they should be.

The teacher should, therefore, not only select one exercise from each muscles-group, but should also see what movements the exercise causes in the joints and what position it gives to the various parts of the skeleton in relation to each other.

He should, moreover, give some calming and soothing exercises after work involving much exertion is done. Such exercises known as "depleting exercises," make the circulation easier and equalize the distribution of blood which has accumulated in strongly working organs; in this way, the results of the momentary efforts are greatly removed and the teacher can take a new exercise without danger of over-working his pupils.

In the case of young children immediate relief after some strenuous exercises may be given by some brisk movements. It is, therefore, advisable that two *breaks* are given in half an hour's lesson. In hot or rainy season more *breaks* are desirable. In the *break* the class should preferably disperse, but the children may run direct from their places in "open order" and back to them again when the class reforms, without the formality of closing and forming the class. In order to retain the stimulus in the *break* frequent changes are needed and since the *break* is to occupy only a brief interval, the movements employed need to be either well-known to the class or so simple as to require no definite teaching.

In the progression of exercises the teacher should begin with easy exercises and see that each exercise in a lesson is well learnt before another new one is given. Every succeeding lesson should be slightly more difficult than the preceding one. Complex exercises are not advisable for young

(B) The year's work.

boys because, if they are executed incorrectly, much of the educational value in the lesson will be lost. It is not necessary that a large number of new exercises are done in one session, but what is done, should be properly assimilated and in the end there should be an examination in order to enable the teacher to determine if the class has mastered those exercises which he has taught to the class.

In drawing the syllabus care must be taken that there is a proper change of work between one kind of exercise and the other, *e. g.*, between slow and quick exercises, mass and individual exercises. In this way one sidedness in the work is avoided. At the same time, there should not be an undue rush from one kind of exercise to the other, from one kind of apparatus to another. The exercises should follow one another easily and naturally and the pupils must get sufficient time for refreshing their mind and body.

It is not possible for us to give, in this book, a scheme of daily model lessons. The teacher should be in a position to make his own plan suitable for the requirements of his class.

In making the syllabus of each class, the headmaster should follow the principle laid down just now, but he may better take the help of an expert in this matter. For this reason we have drawn in Chapter IV a progressive syllabus of exercises; but the head teacher should use his own discretion in making a scheme of work, taking due regard to the climatic and psychological conditions of his place.

(C) The School
work as a
whole.

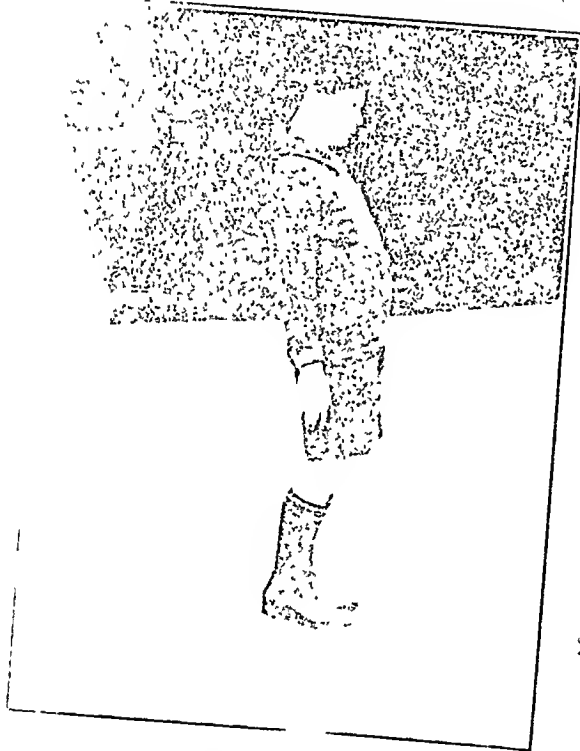
CHAPTER III

Gymnastic Position and Exercises

to assist the body in its work it is necessary to assume various positions in which the body is held in a certain manner. It is essential that the body be held in a certain manner. It will then be seen that the body is held in a certain manner. It will then be seen that the body is held in a certain manner.

Position

The body is held in a certain manner. It will then be seen that the body is held in a certain manner.



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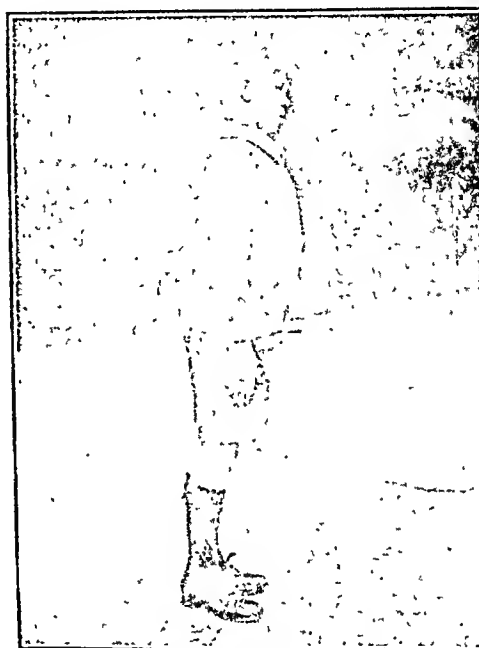
The body is held in a certain manner. It will then be seen that the body is held in a certain manner.

1. Heels together
feet at an angle
of 45 to 55
degrees.

2. Body erect
knee pulled
straight

Incorrect (1)

3. Shoulders moderately drawn back, square to the front.
4. Arms hanging straight with the palms turned inwards towards the body, the fingers being together and straight, the hands lightly touching the thighs.
5. Head erect, eyes looking straight to the front at their own level, chin slightly drawn in.



Incorrect (Slightly over-stretched.)—(FIG. 2.)



The Erect Position.
Correct.—(fig. 3.)

THE POSITION OF EASE.

As all the animals naturally stand putting more weight on one leg than on the other, and as the man does the same, it is advisable that the child should stand in this position with his left foot a little obliquely forward. The weight of the body is borne by the right foot. The pupil must stand straight, keeping a good carriage. The position of ease should be commanded with the right foot forward as the left, because if the child acquires the habit of always resting on the same foot, there is a danger of his getting a one sided curvature of the spine.

II.—*Derived Positions.*

(1) *Of Arms.*

1. *Wing* :—The hands grasp the crest of the hip bones, with palms fully rested and the elbows slightly drawn back.
2. *Bend* :—The forearms are bent upwards at the elbow and brought as far sideways as possible on the shoulder.
3. *Cross-bend* :—The arms are bent at the elbow and lifted sideways to the horizontal position, with elbows well drawn back.
4. *Yard* :—The arms are stretched sideways in line with the body, palms down and the fingers fully stretched.
5. *Reach* :—The arms are stretched horizontally forward, palms facing each other and full shoulder width between them.
6. *Neck rest* :—The hands clasp the lowest part of the head, fingers slightly overlapped, elbows carried well back, forearms horizontal and head erect.
7. *Stretch* :—The arms are stretched overhead, palms facing inward. They should be well back beside the ears.
8. *Drag* :—The arms nearly parallel are 6 inches from the body and palms facing inwards.

2. *Of Legs and Feet.*

1. *Close* :—The balls of the feet are slightly lifted and moved inward and placed on the floor

so that the feet touch along their inner borders.

2. *Astride* :—The left foot is moved its own length to the left, and the right its own length to the right. The heels are on the same line and the weight of the body is carried equally by both feet.

3. *Toe Stand* :—As the heels rise they should come apart. If proper effort is put into the movement, the whole spine is stretched and straightened:

4. *Spring Sitting* :—This position is derived from toe-stand. The knees are bent to about 90° , the hips and ankles are also bent so that the heels which are apart in toe-stand, come together again, but the trunk is maintained in the upright position.

5. *Spring Sitting* :—The knees are bent outward until the thigh muscles touch those of the calf. The trunk is held in upright position.

N. B.—There are various walk positions e. g., walk-stand forward, walk-stand outward, walk-stand sideways etc. Care must, however, be taken that the weight of the body is equally divided over the two feet in these walk positions. There is a tendency not to move the foot far enough away from the fundamental position, which should be guarded against.

III.— ORDER EXERCISES.

Order exercises consist of such movements as are needed for forming the class into files, ranks and circles. They are exercises which do not claim good deal of exertion, but they

are very valuable in themselves, as they generally claim quickness, precision and exactness of performance. They thus necessitate great attention in the pupils and, in this way, have a disciplinary effect.

- (i) *Class Arrangement*.—On the command "Fall in" the children should take their places in one or two lines arranged according to their height. As a rule the shortest should be at the right of the rank or in front of the file, but these places may be occupied by the team leaders irrespective of their height. A class is said to be *in ranks* when the children stand side by side; *in files* when they are one behind the other.
- (ii) *Turning*.—A turning is a movement taken to change the direction in which the class faces. It may be done with a jump or on the heel and toe.

There are various turnings; half turning (45°); turning (90°); and about turning (180°). Turnings are taken in two movements. In turning say to the left, the first movement is a slight lifting of the ball of the left foot and of the right heel. As the right knee, which has been during the movement, is stretched, the turning is taken on the left heel and right toe. The arms are kept still during the movement. In the second movement, the right foot is moved up to the left, so that the feet are again as they were in the erect position.

- (iii) *Numbering*.—Without turning the head the front rank will number—one, two; one, two; and so on, from right to left. Parting and opening lines

(moving to open order) (a) In one line—after numbering in two's, one's, one step to the left, two's two steps to the right—march. After numbering in three's; one's—two steps to the left, three, two steps to the right—march! To return the command is "close the line—march!"

(iv) *Covering*.—At the command "Cover" the file leader stands still; the others move quickly to left or right until they are exactly behind them. Quickness in covering in file may be secured by the teacher making the file cover on himself. He quickly changes his position a short distance to the right or left, the class covering on him without further commands.

(v) *Taking distance in file*.—The distance between the children can be increased or diminished by commanding; "Distance forward—take!" The file leader stands still; and others move backward, and raise their arms forwards until the finger tips just touch the shoulders of the child, in front. When the movement is completed the arms are lowered at the command "Arms—down!"

(vi) (a) *Steps*.—One step forward—march! Take a full pace of 30 inches forward with the left foot, carrying it close to the ground and pointing the toe downward, place it on the ground toe leading and close the right foot to it smartly without stamping.

(b) One step backward—march! Take a full pace of 30 inches backward with the left foot, and close the right foot to it without stamping.

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- (c) One pace to the left—march! Take a full pace of 30 inches to the left foot, place it on the ground toe leading and close the right foot smartly without stamping, keeping the legs straight.

A pace may be taken to right in like manner.

N. B.—Two or more paces may be taken : the heels being closed only on the completion of the last pace.

- (vii) *Falling Out. (Dismissal).*—The class may be dismissed from the position of ease, but the teacher may employ any other devices of his own, but the dismissal must be definite and brightly performed.

IV.—LEG EXERCISES.

The leg exercises, mentioned here, are fairly easy ones as distinct from the more violent exercises of marching, running, jumping etc. They provide good starting positions for other exercises, improve the control of the legs and increase the flexibility of their joints and the strength of their muscles in the body without being specially strenuous they are well suited to be used, in the introductory and final exercises. They can, for the same reason, be used as depleting exercises. They may be divided as follows :—

A. Foot Closing.

- (1) *Feet—close!*—Raise the toes and close the feet by pivoting on the heels, keeping the knees straight.
- (2) *Feet—open!*—Raise the toes and open feet to the angle of 45° .

- (3) *Feet full—open!*—Raise the toes and open feet to an angle of 90° .

N. B.—Like most of the leg exercises, these exercises should be taken from the "hips firm" position.

Precaution :—The body should not be inclined backward when the directory words are said.

B. Foot Placings.

Foot placings give good starting positions for many exercises. They do not, in addition, call for much effort and are, therefore, useful at the beginning and end of a lesson. In all these exercises the body has to fall a little in the direction of the moving foot and since this takes time, the exercise should not be done with great speed. In order to avoid a heavy clumsy foot placing, the moving foot should be stretched and toes placed on the ground first. In bringing the foot back to its original position, the body has to be lifted again.

General Precautions :—

1. Don't bend the knee of the standing leg.
2. Don't move the foot too short a distance or the weight of the body will rest on one leg.

1. *Wing Standing, Foot Placing Astride.*

Hands on hips—place! (By numbers) Feet Astride—
1—2.

2. *Wing Standing, Foot Placing Sideways.*

Hands on hips—place! Left foot sideways—place!

3. *Wing Standing, Foot Placing Obliquely Forward.*

Hands on hips—place! Left foot obliquely forward—
place!

N. B.—It can be done in two movements ; in the first, the foot is stretched obliquely forward with the toes close to the ground ; in the second movement, the body falls over in the direction of the forward foot, and the foot which is thus moved further forward is put, on the ground.

In two movements, foot inward—place !

4. *Wing Standing, Foot Placing Forward.*

Hands on hips—place ! left foot forward—place !

N. B.—“Foot placing forward” can be introduced in two movements in the same way as (3).

5. *Foot placing sideways* can be combined with heel raising and with heel raising and knee bending.

(a) Hands on hips—place ! Foot placing sideways with heel raising 1—2—3—4.

Go ! Halt ! Hands—down !

(b) Hands on hips—place ! Foot placing sideways with heels raising and knee bending 1—2—3—4—5—6 and so on ; or Go ! Halt ! Hands down !

6. *Foot Placing Sideways and Foot Placing Astride* can further be combined with certain arms movements.

(a) (By numbers)—Arm stretching upward feet astride—1—2.

(By numbers) Arm stretching downward feet together—1—2.

(b) (By numbers) Arm raising sideways, foot placing sideways—1—2 (Right) 3—4.

(33)

(c) (By numbers) with arm raising sideways upward. foot placing sideways 1-2 (Right)—3-4.

C. Lungings.

Lungings are among the most beautiful and plastic of the free standing exercises and ought to be practised. They become strenuous exercises if a long step is taken. If lunging is combined with trunk twisting the exercise becomes in addition a dorsal or a lateral exercise according to the twisting of the trunk.

D. Outward Lunge.

The starting position is with the feet full open. The



Outward Lunge.(Fig. 4.)

body beginning to fall outward before the foot is moved; as soon as the fall has begun the foot is moved outward. The body and the back leg as they fall are kept in one straight line like a stiff rod. The ankle of the moving foot is well stretched so that the

toe touches the ground first, the heel is then quickly lowered, the knee is bent smoothly so as not to stop the body with a jerk. The knee is bent till it is nearly over the toe and the lower leg inclined well forward.

Commands—Feet full—open!
Left foot lunge outward—place!
Recover! place! or Feet—change!

Lunging Forward, Backward and Sideways.

These are carried out on the same principles as in lunging forward. The back ankle needs to be supple in order to keep the heel on the ground with the foot at the proper angle.

N. B.—The Toe Lungings are done exactly on the same principles, the toe resting lightly on the ground about three foot-lengths behind the other heel.



Forward Lunge —(Fig. 5.)

D. Heel Raising.

The strong stretching of the body with head erect, is the most valuable part of the "raising" exercises and should be properly done. When the carriage is getting slack, it may, however, be of greater effect to command a heel raising than to demand a general "stretch up."

Standing, Heel Raising—Heels - raise !

The heels are raised from the ground as high as possible, keeping them together, legs straight, body and head erect and well stretched.

Heels—lower !

The heels are lowered evenly and lightly on the ground.

Precautions :—

1. The knees should be kept fully stretched.
2. The head should not be parted and must be well-raised.
3. The head and the trunk must not be bent forward or the stretching is lost.

E. Knee Bending.

Knee bendings are very useful exercises for the following reasons.

- (i) They make the joints of the knee supple.
- (ii) The strong pressing out of the knees has a corrective effect on the less pronounced forms of knock-knee.
- (iii) Knee bendings are very good preparatory exercises for jumping, both for the *take-off* and specially for *landings*, where the knees are to yield quickly.
- (iv) They are among the best depleting exercises.

Knee Bending—Knees—bend!

Keeping the heels together and the trunk erect, bend the knees outward till the thigh and the lower leg form a right angle.

Knees—Stretch !

N. B. - Knee bending exercises should better be combined with heel raising and sometimes with arm movements.

(1) *Wing Standing, Heel Raising and half Knee Bending.*

Hands on hips—place ! Heels—raise !

Knees half—bend !

The heels are fully raised then the knees are bent outward till a right angle is formed in the knee-joint ; the heels are kept well up and close together.



Half Knee Bending.—(FIG. 6)

Knees—Stretch!

The knees are smoothly stretched and are fully out without the trunk being moved or losing its vertical position.

Heels—lower ! Hands—down !

After the pupils have had some practice the command may be given by numbers.

Heel raising and half knee bending—1-2-3-4. If the exercise is to be done in time the command is.

Heel raising and half knee bending—go ! halt !

Precautions :—

1. Keep the trunk erect.
2. Keep the heels together.
3. Do not diminish the angle between the feet.
4. Press out the knees.
5. Fully stretch out the knees in the knee stretching.

2. *Wing Standing, Heel Raising and Full Knee Bending*
Hands on hips—place ! Heels raise !
Knees full—bend ! Knees—stretch ! Heels—lower or
(in time) Heel raising and full knee bending
1-2-3-4. Go ! Halt !

This exercise can also be taken with the arms in the ear or stretch position.

3. *Wing Standing, Quick Heel Raising and Knee Bending*
Hands on hips—place ! Quick Heel raising and knee
bending—1-2-3-4 or Go ! Halt !
4. *Knee Bendings combined with arms movement*



Full Knee Bending.—(FIG. 7.)

- (a) Arms—bend ! heels—raise ! with arms stretching upward (sideways), quick half knee bending—1-2 and so on. Heels—lower !

Arms downward—stretch !

- (b) Arms upward—Stretch ! Heels—raise ! With arm lowering sideways, half (or full) knee bending 1-2 and so on. Heels—lower ! Arms downward—stretch !

F. Game-like Exercises.

1. *Four Standing Position.*

On fours—down! up! On down, the knees are fully bent, the hands placed on the floor just in front of the feet; the arms should be between the knees.

2. *Bunny Hopping.*

From four standing position, hopping forward first on hands and then on feet.

Commands : begin—halt !

3. *Cross-sitting Position.*

With cross-leg sitting—down! up! The legs are crossed by one foot from sitting position.

4. *Crow Marching.*

From wing spring sitting position marching forward by a spring in the knees and ankles.

Commands : begin—halt !

5. Standing like little shrubs and big trees.

6. Standing like dwarfs and giants.

7. Plucking flowers and berries.

8. Riding a bicycle.

9. Scaring the Crow.

10. Dipping the candles.

11. Bouncing like little and big India-rubber balls.

12. Swinging your legs like a Pumping-jack when you pull the string.

(a) both legs out (leg parting).

(b) the same, clapping hands forward.

(c) one leg only (leg swinging sideways)

With arms stretching
knee bending—1-2

—raise! With arms
all knee bending
Arms downward—

V. NECK EXERCISES.

Neck Exercises give the head its correct position and thus adds strength and beauty. They have, moreover, good influence on the circulation of blood in the head.

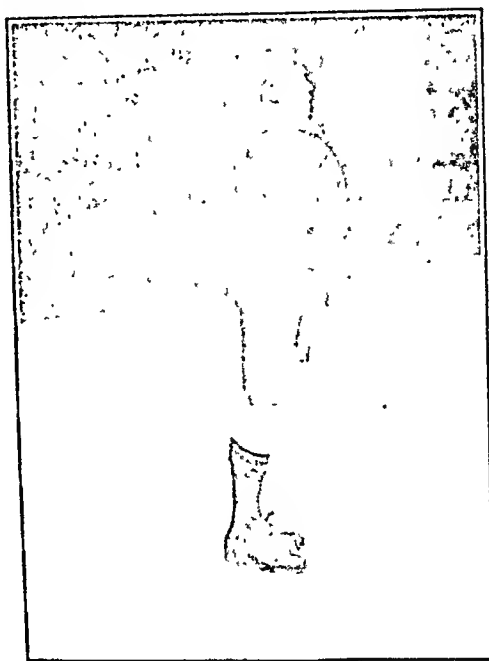
(1) *Head Pressing Backward.*

Head Backward—press !

The head is pressed slowly backward, but the position of the trunk is not altered and the chin well drawn in.

Upward—Stretch !

The head is slowly raised to its former position, the chin remaining drawn in.



Head Pressing Back.—(Fig. 8.)

Precautions.—

1. The chin is not to be pulled forward.
2. The loin must not be hollowed.
3. The shoulders must not be raised.
4. The breathing must be free.
5. The neck must not be bent too early.

(2) Head Bending Forward.

Head forward—bend !

The head is bent slightly forward with the neck stretched upward and the chin drawn in. The neck curve is straightened out as far as possible, while the neck, as a whole, is kept well drawn back.



Head Bending Forward.—(Fig. 9)

Head Bending Sideways.

Head to the left—bend !

The head is bent slowly but strongly to the left, keeping it well back during the movement and the face turned to the front.

Upward—Stretch !

The head is slowly raised to its former position; similarly, for the right side.

Precautions :—

1. None of the shoulders is raised.
2. The head must not fall forward.

(3) Head Turning.

Head to the left—turn !

The head is turned slowly but strongly to the left as far as possible with the face kept vertical ; the head well back, chin in, and body steady.

Forward—turn !

The head is turned to its former position.

Head Turning quickly.

Quick head turning to the left—go! or, in numbers, 1-2-3-4.

It is done as before, but each movement is performed quickly.

GAME LIKE EXERCISES.

1. Nodding the head like a horse (bending forward—backward).

N. B.—The horse's nodding motion has been found specially suitable, since the neck should take

part in the movement, as the horse's neck does. The nod tends to straighten out the spine. In the return, care must be taken not to throw the head backward but merely raise it to its vertical position.

2. Swinging like the pendulum of a clock.
3. Turning like a weather cock when the wind blows, (turning from side to side).
4. Looking at the bird or squirrel in the tree ; bending backward or turning from side to side.
5. Dropping the head forward like some one falling asleep, and waking up again (bending forward),

VI.—ARM EXERCISES.

The simple and comparatively easy movements of the arms are included in this group of exercises.

Arm exercises provide starting positions for various trunk exercises and develop the mobility of the shoulder blades and joints of the arms. They also improve the carriage of the upper part of the trunk and, at the same time, strengthen the arms for harder work.

Some energetic arm exercises, *e. g.*, arm stretchings and arm swingings may be used principally as "introductory exercises" on account of their stimulating effect on the circulation and respiration, while the more moderate ones, *e. g.*, arm raisings and arm flingings are used in the final exercises.

The arm exercises are used in conjunction with other exercises to increase the effects of the latter. The most important of arm exercises are as follows :—

A.—WING & EAR POSITIONS.

1 *Standing, hand placing on hips.*

Hips—firm ! Hands—down !

The hands are raised quickly and the waist just above the hips is firmly grasped with fingers together in front and trunks behind. The palms are pressed well down and shoulders are kept in the 'erect position'.

2. *Standing hand placing on neck.*

Neck—rest !

The hands are quickly raised in the shortest way and



Hand placing on Neck.—(FIG. 10.)

placed behind the upper part of the neck with finger tips just meeting, chest well raised, head erect and elbows pressed well back.

Precautions :—

- (i) The arms are sharply lowered in the shortest way.
- (ii) The elbows must not go forward when the head is freed back, or vice versa.
- (iii) The loin is not to be hollowed.
- (iv) The hands must be placed against the neck and must not rest too low.

B.—ARM STRETCHINGS

1. *Arm Bending.*

Arms—bend !

The arms are bent quickly and energetically by carrying the



Arm Bending —(FIG. 11.)

hands the shortest way close up in front of the body, till the fore arms are fully bent on the upper arms, fists clenched and carried backward into line with the shoulders. The elbows are brought forward and close to the body and the backs of the hands turned outward.

Arms downward—stretch I

The arms are sharply stretched downward to the sides.

N. B.—While it is being introduced the bend position may be taken slowly. As it is an intermediate movement common to all arm stretchings and many other exercises, its correct performance is of the utmost importance. Care should also be taken that the breathing is, in no way, restricted by forcing the elbows too close to the sides.

Precautions.

- (i) The hands must not be raised sideways in bending the forearms.
- (ii) Elbows must be well kept down.
- (iii) The head should not fall forward or the loin is hollowed.

2. *Arm Stretching Sideways.*

Arms—bend I Arms sideways—stretch I

The arms are sharply stretched sideways in line with the shoulders, palms of the hands downward, fingers closed and fully extended.

Arms—bend I

While the palms are turned upward the arms are brought quickly and strongly into the bend position without any hollowing in the loin.

Precautions.

- (i) Hands should be carried the shortest way.
- (ii) The arms should not be lowered below shoulder height and must be carried sufficiently backward.
- (iii) The head and the lower part of the trunk should not come forward nor the loin should be hollowed.

3. *Arm Stretching Upward.*

Arms—bend ! Upward—stretch !

The arms are sharply stretched upward to their fullest ex-



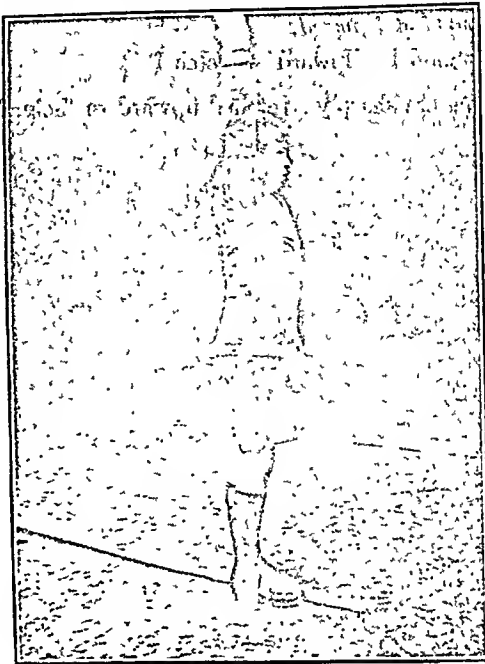
Arm Stretching Upward (Fig. 12.)
Slightly Over-stretched.

tent, hands the shoulder-breadth distance. palms inward, fingers closed and fully extended. The hands must be held so that, from

the side, a little of the face can be seen in front of the arms, but an equal amount of forehead and chin.

Arms—bend !

The arms are drawn quickly and strongly straight down to the bend position with no hollowing in the loin.



Arm Stretching Upward.—(FIG. 13.)

Precautions :—

- (i) Hands should be in one line with the arms.
- (ii) Palms should be turned fully inward.
- (iii) Fingers should be fully stretched.
- (iv) Arms should be well back.
- (v) The head should not fall forward nor the back is hollowed.

4. *Arm Stretching Forward.*

Arms—bend ! Arms forward—Stretch !

The arms are sharply stretched forward in line with the shoulders, palms of the hands inward, fingers closed and fully extended; shoulders kept well back.



Arm Stretching Forward (FIG. 14.)

Arms—bend !

The arms are pulled quickly and strongly back to the bend position.

N. B. This exercise is difficult to perform correctly, and should not therefore be taken too early.

Precautions:—

- tl (i) The shoulders are not to go forward.
a (ii) The back must not be rounded.

5. *Alternate Arm Stretching Upward and Downward.*

t Arms—bend ! Left arm upward, right arm downward—stretch !

The left arm is stretched up to the stretch position, the right down to the erect position without the body being moved.

Arm changing (in numbers) 1-2-3-4 or (In time) arms—change ! In the first movement both arms are bent, in the second they are stretched in the opposite direction,

Arms—bend ! both arms are brought to the bend position

6. *Combined Arm Stretchings.*

The arm stretchings already described can be combined two or three together and can be taken from 'bend position' and the 'erect position'.

Examples :—Arms—bend ! Arm stretching upward and sideways—1-2, (Sideways)—3-4 ; and so on ; or Go ! Halt !

Arms downward—stretch !

C.—ARM FLINGINGS.

1. *Arm Across Bending.*

Arms across—bend !

The arms are well bent and raised quickly to shoulder height. The forearms are held in the same horizontal plane as the upper arms, the hands in continuation of the forearms, fingers together and stretched, elbows pressed as strongly back as possible.

Arms downward—stretch !

The hands are brought quickly the nearest way down to the 'erect position'.



Arms Across Bendings.—(Fig. 15)

2. Arm Flinging.

Arms across bend ! arm flinging—1-2; or Go ! Halt !

The elbows remaining in the same position the arms are flung vigorously sideways and backward to their fullest extent, keeping the palms of the hands downward.

N. B.—In order to learn to get the fling horizontal, the pupils should do it slowly at first.

Precautions.—

1. The head must not fall forward.
2. The shoulder must not be lifted.
3. Flinging must be horizontal.
4. Hands must not be brought too close together in the recovery.

D. ARM SWINGINGS.

1. *Arm Swinging Downward—Backward.*

Arms upward—stretch ! Arms swinging downward—backward 1-2.

On 1, the arms still well stretched, are swung quickly forward—downward—backward to the drag position. The shoulders are kept well down, the head high, and the back straight.

On 2, the arms are in the same way swung forward—upward.

The erect position is retaken on the command, "Arms downward—stretch ! Arms sideways—downward—swing".

N. B.—At first, arm swinging is practised from drag position and is done slowly, so that the pupils can learn to move the arms in the right way.

Arm swinging has a very beneficial effect on the pectoral muscles.

Precautions.—

1. Arms must not be parted and bent during the swing.
2. Trunk must not be thrown backward.
3. The back must not be rounded in the downward swing, nor should the loin be hollowed in the upward swing.

2. *Halt Stretch, Halt Drag Standing, Arm Swinging.*

Left arm upward, right arm backward—stretch ! Arms swinging forward—upward, forward—downward—1—2. On 1 and 2 the arms are changed with a swing. It can also be done in time.

N.B.—As it is difficult to keep the arms parallel as they are moved the exercise should, at first, be done slowly, and, now and then, with a stop in the reach position.

3. *Arm Circling Forward (Backward).*

Arm circling may be done with one hand on the hip and the other hand circling, the hands being changed after an interval. For both the hands circling backward or forward at the same time the following commands are appropriate.

Arm circling forward (backward)—ready ! Go ! Halt ! On 'ready' the hands are closed and turned so that the fingers face forward. On 'go' the arms are swung first slowly, then quickly round in the direction indicated in as large a circle as possible. On 'halt', which is said slowly; the arms are stopped on the completion of the circle begun and the erect position is taken.

N.B.—A stride or walk standing position is a starting position for this exercise.

Precautions.—

1. During the backward swing of the arm the head and the lower part of the trunk must not be poked forward.
2. In the swinging forward the hands should not come too close together.

E.—ARM RAISINGS.

1. *Arm Raising sideways.*
Arms sideways—raise !

The arms are raised steadily sideways in line with the shoulders, palms of the hands downward, fingers closed and fully extended.

Arms—lower ! The arms are lowered steadily to the sides.

Precautions :—

1. The shoulders must not be raised.
2. Hands must be carried well back.

2. *Arm Raising Upward.*

Arms sideways—raise ! Arms upward—raise !

The palms of the hands are turned upward and the arms are raised to the stretch position.

Arms—lower !

The palms are turned down and the arms lowered to the erect position.

3. *Arm Raising Sideways and Upward.*

Arms sideways—upward—raise ! Sideways—downward—lower ! or, in time, either in 2 or 4 movements. Arms raising sideways upward 1-2 or 1-2-3-4.

N. B.—If the exercise is used as a breathing exercise, it is always done in two movements.

4. *Arm Raising Forward Upward, Lowering Sideways Downward.*

Arm raising forward upward, lowering sideways—downward—1-2, or Go ! Halt !

The movements are carried on as before.

Precautions :—

1. The arms must not go sideways downward before they quite reach the stretch position.

F.—GAME-LIKE EXERCISES.

1. *Windmills.*

With a jump, feet astride—place ! Arms—bend ! Arms—circling - begin, Arms—change !

To double arms—change !

2. *Punching the Balloon.*

Foot sideways—place !

Arms—bend ! Punching forward with trunk turning—begin ! stop !

As the left arm punches forward the trunk is turned to the right. When the right arm punches forward, the left arm is withdrawn and the position of the body is reversed.

Later, both the arms may be punched forward.

Precautions :—

1. Knees must be kept straight.
2. The body must not lean forward.



Punching the Balloon.—(FIG. 16.)

INDIAN CLUB SWINGING.

It is one of the most popular of Indian exercises practised with a pair of clubs (Mugdar) and is very suitable for children of all ages. It is an excellent exercise for wrist, the shoulder and the chest and may be followed rhythmically. To make the exercise

varied and cheerful, the teacher should change the movements after every two minutes.

In club swinging the handle of the club should be grasped firmly and not too close the knob; the knob must not be held between the thumb and the fore-finger. On no account should the teacher allow the use of heavy clubs for the display of feats of strength.

As a general rule, the feet should be kept firm in the ground and in the stride position about 12 to 18 inches apart, all twistings from side to side should take place in the waist and not by shifting the feet.

The following are some of the important club exercises :—

1. Stretch Stride St: Outward Front Circling.
2. Stretch Stride St: Inward Front Circling.
3. Stretch Stride St: Parallel Front Circling.
4. Stretch Stride St: Combined Outward Front Circling.
5. Stretch Stride St: Combined Inward Front Circling.
6. Yard (Reach) Stride St: Outward Shoulder Circling.
7. Yard (Reach) Stride St: Inward Shoulder Circling.
8. Stretch (Reach) Walk Standing Forward Circling.
9. Stretch (Reach) Walk St: Backward Circling.
10. Stretch (Reach) Walk St: Combined Backward Forward Circling.

VII.—SPAN BENDINGS.

Span bendings are exercises where the body forms an arch between two fixed points generally the feet and the hands. The aim of this group of exercises is to straighten out the thoracic curve. Span bendings must be performed correctly in order to get the desired effect. As most of children are very supple

in lumbar region than in the thoracic they are likely to bend their loins too much and thus get a harmful effect; hence the small children should only have the introductory or preparatory forms from isolated starting position.

Span bending is specially useful for improving the carriage on account of its effect on the dorsal part of the spine. It is best performed with wall-bars, but in their absence living support, or even an ordinary wall may be used.

N. B.—1. Span bending requires a deal of strain in the abdominal muscles and, therefore, care should be taken that the breathing is not restricted. The position should never be held long.

2. Span bending should be followed by "trunk bending forward" and "trunk bending downward" and if span bending has been strong a 'defective' leg exercise should be given in addition.

Span Bending with Living Support.

Hands upward—stretch! (by two movements).

Trunk backward—bend!

Hands—grasp!

Heels—raise!

Heels—lower!

After the arms are raised upward the trunk should be bent backward slightly and the whole body, bending from the ankle joints, should not be made to fall backward till the forefingers of both hands rests on living support. A full grip with both hands should then be taken. When the position is maintained the heels



Span Bending with Living Support.
(FIG. 17.)

are raised as far as possible from the ground. To render the exercise still more difficult one of the legs or a knee may be raised.

Precautions:—

1. Do not bend too much at the waist.
2. Do not bend the knees.
3. Press the head well back between the arms.
4. Keep the wrist straight.
5. Breathing must be free.

VIII.—HEAVING EXERCISES.

These are really arm exercises, but the arm muscles work against the weight of the whole body.

As the heaving exercises have a great beneficial effect in developing the mobility of the thorax, suitable apparatus must be provided for their correct performance.

In cases where no suitable apparatus is available, heave movements without apparatus must be undertaken since, however, these cannot, either physically or mentally, fully replace apparatus exercises, the teacher should take advantage of whatever objects are to be found in the school yard or its neighbourhood which will serve for hanging or climbing exercises, *e.g.*, benches, ladders etc. As we fear most of our schools will not be able to have suitable apparatus for this exercise, we here give only those heaving exercises which can be performed without apparatus.

1. *Carrying a basket.*

The children divide up into groups of three, better number in threes. No. 1. is basket and sits on the floor with knees bent and hands clasped under his thighs. Nos 2 and 3 are to carry the basket and on each side of it. They grasp the handle with the inside hand on the upper arm by the armpit. No. 2 is basket next, then No. 3; and so on.

2. *Pushing Contest.*

The children stand in pairs one facing the other. On the command, 'hands—meet!' the children raise both their hands, till the palms of the one touches those of his opponent. On the command, 'push!' the children begin to push each trying to throw back his opponent by one step. One who succeeds wins one mark for his side.

3. *Pulling Contest.*

As before; the children divide themselves in two parties, one facing the other. On the command 'hands,—clasp!' the children

To render the exercise may be raised.

the arms.

raise their hands and clasp their opponents' hands. On the command, 'pull' the contest begins. The one pulling his adversary by one step wins a point for his side.

N.B.—Some of the strenuous arm exercises e. g., bend standing, arm stretching upward and sideways, and imagining to work with heavy weights—may be substituted for heaving exercises.

IX.—BALANCE EXERCISES.

Balance exercises are those which develop the power of balancing the body under varying conditions, their characteristic feature being that the balance of the body is rendered more difficult by reducing the size of the base of support.

Balance exercises employ a large number of muscles, demanding little actual strength and are, therefore, nice 'depleting' exercises. They require great mental concentration and good muscular co-ordination and should, consequently, be done slowly.

Balance exercises on apparatus are, in general, the most valuable, and the teacher should make use of benches and stools to make the exercises more attractive and harder.

A Knee Raisings.

1. *Wing Standing Knee Raising.*

Hips—firm ! Left knee—raise ! lower !

The left knee is bent and raised upward, the body being kept erect until the thigh is at right angles to the body. The lower leg is hung straight downward with the toe pointing to the ground,



Knee Raising—(Fig. 18.)

Precautions :—

1. The thigh should be at right angles to the body.
2. The lower leg should be vertical.
3. The trunk and the head should be kept erect.
4. Standing leg should be straight.

2. *Wing, Toe Standing Knee Raising.*

This is the same exercise as the previous one, except that the heel of the standing leg is raised to make the exercise more difficult.

B. Leg Raisings.

B. Leg Raising Sideways.

Hands on hips—place ! Leg sideways—raise !



Leg Raising Sideways.—(FIG. 19.)

The leg is raised sideways to the left, toe pointed. Both the legs are kept straight and the body is as erect as possible.

Leg—lower ! Hands—down !

Similarly leg raising forward can be done (FIG. 20).

The left leg is lowered to its original position.

2. *Quick Leg Raising Sideways (in one movement).*

Alternate quick leg raising sideways in one movement—
1-2. On 1, the left leg is raised quickly sideways as high as pos-



Leg Raising Forward.—(FIG. 20.)

sible and then lowered again without a stop; on 2, the right. Arm raising sideways and, lowering in one movement, can be taken with the leg raising.

N. B.—Beginners may take the exercise with the hands free, but the more advanced pupils should do with hands on hips.

These two exercises are good preparatory exercises for marching and for high jump.

Precautions :—

1. The body should remain as motionless as possible.
2. Other faults in the correct performance are almost the same as in previous ones.

3. *Knee Stretching Backward.*

Hands on hips—place! Left knee—raise! Backward—stretch!

While the knee is slowly stretched the leg is moved so far backward that the tips of the toes are about a hand's breadth from the floor.

Knee—raise! Knee—lower!

Precaution :—

1. The knee is not to be stretched so far from backward as to cause the body to lean from the hip-joints.

4. *Knee Stretching Forward.*

Hands on hips—place! Left knee—raise! (Knee) forward—stretch!

N.B.—This is a difficult exercise and should be introduced with support for both hands. In the absence of any apparatus e. g. beam, the pupils can help one another and the exercise can thus best be taken on a stool or a bench.

5. *Wing Run Standing, Knee Bending With Trunk Leaning Forward.*

Hands on hips—place! Right leg backward—raise! with trunk leaning forward, left knee—bend!

While the knee is bent if possible at right angles, the body and near leg are moved until they are about horizontal. The head must be somewhat raised and the back strongly straightened so that it forms an arch with the leg in continuation of it.

(65)

With trunk raising, Knee—stretch! The knee is stretched and the body is raised to the run-standing position. Feet—change !
(1-2) Finally;

With leg lowering, hands—down !

Precautions .—

1. The standing leg should be properly bent.
2. The raised leg should be well stretched.

Leg Raising Backward.

Hands on hips—place ! Left leg backward raise ! The left leg is moved slowly backward to the same position as in knee stretching backward. Leg—lower ! hands—down !

Leg Raising Forward:—

Hands on hips—place ! Left leg forward—raise ! The left leg is raised slowly forward to the same position as in knee stretching forward. Leg—lower !

Hands—down !

C. Knee Bending.

Reach Kick Standing, Full Knee Bending.

The leg is raised forward with the foot about 6 inches from the floor, and the arms are raised to reach position.

Commands:—

Right leg and arms forward—Raise ! Left knee full-bend !

In the second the body is lowered as far as possible by a deep knee bending in the left knee without the heel being lifted.

The pupils must try to keep the trunk vertical. This makes the exercise difficult and to perform it correctly, the ankle-joint of the standing leg must be strongly bent.

Precauti

Knee—Stretch 1 With arm lowering, feet—change 1

D. Balance Exercises on apparatus.

Balance exercises on apparatus demand greater mental exertion and should be performed on such small apparatus as are available, e. g. benches or stools. Some of these are given below :—

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1. Side standing mounting.
2. Front standing mounting with a run.
3. Balance walk forward and backward.
4. Balance walk forward with kneeling.
5. Balance walk forward with knee raising
6. Balance walk forward with single full knee bending.

E. Game-like Exercises.

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stretch

N.B.—

1. *Cock-fight.*

The class is divided into two equal groups ; the children stand facing each other.

Hands—fold 1 Leg—raise 1 Opponents—push 1

On the last word of command, the contest begins, each trying to compel his adversary to place the raised foot.

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2. *Sitting as Bunbys.*

On four standing position—down 1 Hands on head—place 1

trunk

3. *Threading the needle.*

Hands—clasp 1 Leg through the arms—place 1

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The left leg is slowly inserted through the loop of the arms.

4. Standing on one leg like a stork.

5. Kissing the knee.

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6. Kissing the toe.
7. Standing on one leg and bending, Stretching, Swing
ing the other like a jumping-jack when you pull the
string.

X.—LATERAL EXERCISES.

Lateral Exercises consist chiefly of the exercises of turning the trunk and bending it sideways. They develop the lateral flexibility of the spine and its lower part of rotation on its axis. They, moreover, increase the general mobility of the thorax by alternate elevation and depression of the ribs. They also have a very beneficial effect on the digestive organs.

A. TRUNK TWISTINGS.

In trunk twisting the spine is twisted in the lumbar and dorsal curves. The body is turned gently as far as possible to the left or right, without moving the legs, the head and arms making no separate movements, but keeping their relative position to the shoulders.

1. *Wing Stride Standing, Trunk Twisting.*
Left foot sideways, hands on hips—place! To the left—
twist.

The trunk is steadily twisted as far as possible to the left, the head being kept in the same relative position to the shoulders as in the erect position, the feet firm on the ground and the legs straight.

Forward—twist! Foot inward, hands—down!

The trunk is brought steadily forward to its original position.

Precautions :—

1. Feet must be kept firm on the ground.

2. Knee must not be bent.
3. Head and shoulders must be kept in their relative position.

2. *Quick Trunk Twisting With Single Arm Flinging Outward—Inward—*

Left foot sideways, arms across—bend !

With single arm flinging outward—inward, quick trunk twisting in two movements—1-2.

On 1, a quick-trunk twisting is taken to the left and back again, together with an arm flinging outward—inward of the left arm, done in such a way that the twisting is made greater by the arm flinging. On 2 the same to the right.

3. *Bend Stride Twist Standing Arm Stretching Upward.*

Left foot sideways, arms—bend ! To the left—twist !

Arm stretching upward—1-2. To the right—twist !

Arm stretching upward—1-2. Forward twist. Left foot inward, arms downward—stretch !

4. *Wing (Ear) Ride Sitting, Trunk Twisting.*

The pupils should first be arranged facing stools, before the command is given.

Left legs over, ride sitting—place !

Ride sitting position is taken on a stool ; the heels must be pressed against the rear foot of the stool. The knees must be pressed firmly against the apparatus.

Trunk to the left-twist. Forward—twist and so on.
From position—Up !

The leg which was thrown over the stool when the position was taken is now brought back, and the erect position is taken.

Precaution :—

1. The left knee shall not leave the stool while twisting to the left.

6. *Astride Head Rest Trunk Turning.*

Done as shown in Fig. 21.

B.—TRUNK BENDING SIDEWAYS

1. *Standing Trunk Bending Sideways.*

Trunk to the left—bend !

The trunk is steadily bent as far as possible to the left, the relative position of head, shoulders and arms remaining unaltered. During the movement the pelvis must be moved somewhat over to the right, but as the feet are together, this inclination is not important at all. Both the knees should remain fully stretched, the feet firm on the ground, and the breathing must be free.



Head Rest, Trunk Turning.
(FIG. 21.)

Upward—Stretch ! Feet—open !

2. *Half Stretch (close) Standing, Trunk Bending Sideways :—*

Arms—bend ! (Feet close), Right arm upward, left arm downward—stretch ! Trunk to the left—bend ! Upward—stretch ! Arm changing 1-2. or (in time) arms—change ! Trunk to the right—bend ! Upward—stretch ! Arms—bend ! Arms downward—stretch !

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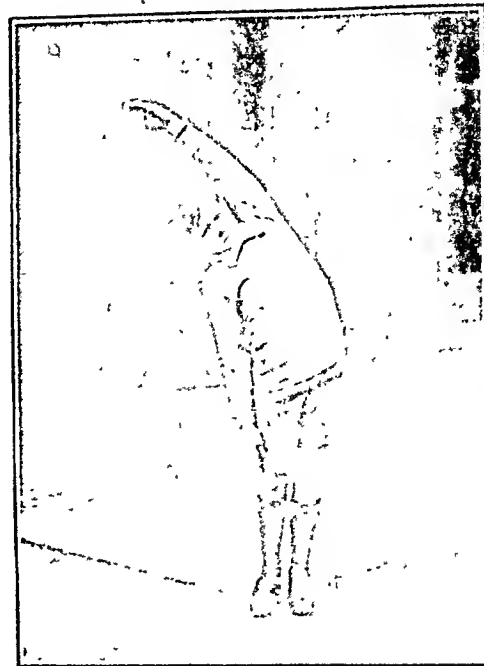
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Half Stretch (close) Standing Trunk
Bending Sideways.
(Fig. 22)

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The bending is only taken to the left when the right arm is stretched up.

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Astride Neck Rest, Trunk Bending Sideways.

The figure 23 shows the correct position of the exercise; commands are as in the previous exercise.

N. B.—These exercises can be rendered more difficult by ordering leg raisings.

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Astride, Neck Rest, Trunk Bending Sideways.
(FIG. 23.)

C. Side Hand Lyings.

To front hand lying position—Come !

To the left hand lying position—Change !

The exercises can be rendered more difficult by ordering different positions of the arms and legs ; e. g., high side hand lying, leg raising.

D. Oblique Lungings.

Standing, Lunging Obliquely Forward With Alternate Arm Stretching Upward and Downward.

This is the same exercise as foot outward lunge given in leg exercises except that the alternate arms are stretched upward and downward.

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E. Game-like Exercises.

1. *Tea Pot.*

The children say "This is my handle" and place one hand on hip. "This is my sport" and place one hand on head. "Pour me out" and bend their trunk sideways.

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arm,
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2. *Sawing Wood.*

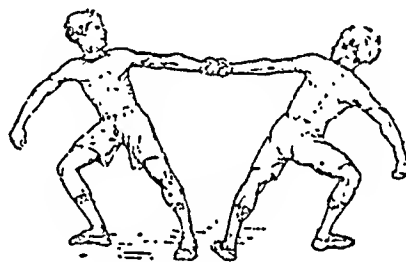
3.

Children stand opposite to one another in the erect standing position each grasping his partner's hand. One command, Begin! the movement of sawing is imitated with stretching and bending of arms, while the trunk is twisted as much as possible.

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Tug of war with one hand.
(FIG. 24.)

1 a 3. *Tug of war with one hand.*

See fig. 24.

XI. ABDOMINAL EXERCISES.

Abdominal exercises strengthen the muscular walls of the abdomen and develop the muscles which play important part in maintaining the proper carriage of the body. When the abdominal muscles contract, they press upon the underlying organs and drive the blood into their capillaries on towards the heart. When they relax, the pressure is released and the capillaries fill again. The alternate contraction and relaxation of the abdominal muscles in these exercises, therefore, stimulate the abdominal circulation and promotes the functional activity and healthy development of organs of digestion.

Special attention must be paid to breathing in the performance of abdominal exercises. When the abdominal muscles are put to work the breathing will be partly restricted and the teacher must be careful not to choose exercises which lies too near the limits the pupils' strength.

A. TRUNK BENDING BACKWARD.

1. *Wing Standing, Trunk Bending Backward.*
 Hips—firm ! Trunk backward—bend !

Upward—stretch !

The upper part of the trunk is bent slowly backward, the head commencing the movement and kept well back with the chin drawn in. By reversing the movement the trunk is raised to the starting position.

Precautions.

1. The knees must be kept straight.
2. The whole spine should be arched. The bending should not be made from the waist alone.
3. The chin must well drawn in.
4. Breathing should be free.

N.B. As one of the objects of this exercise is to stretch the spine the bending may be only slight in the beginning, but correct; and as progress is made the bending may be increased by degrees.

Other exercises of this type are :—

position

(a) Stretch standing trunk bending backward.

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(b) Wing or stretch astride standing trunk bending backward.

Sitting on bench (or stool)—down !

Trunk backward—bend !

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B.—KNEE AND LEG RAISINGS.

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Back Lying And Leg Raising.

Lying on the back—down !

3.

The body should be stretched flat on the back, feet together, toes pointed, arms to the sides, palms of the hands on the ground.

Left leg—raise !

in

The leg is raised steadily to an angle of 45° , the knees being kept straight, toes pointed and the seat on the ground.

4

Leg—lower !

The leg is steadily lowered to the ground.

Precautions :—

1. Breathing must be free.
2. Knees should not be bent.

N. B.—Both the legs may be raised instead of the one leg.

In order to make the exercise harder both the legs may be lowered sideways. As the correct performance of this exercise is very difficult, "living support" may be given.

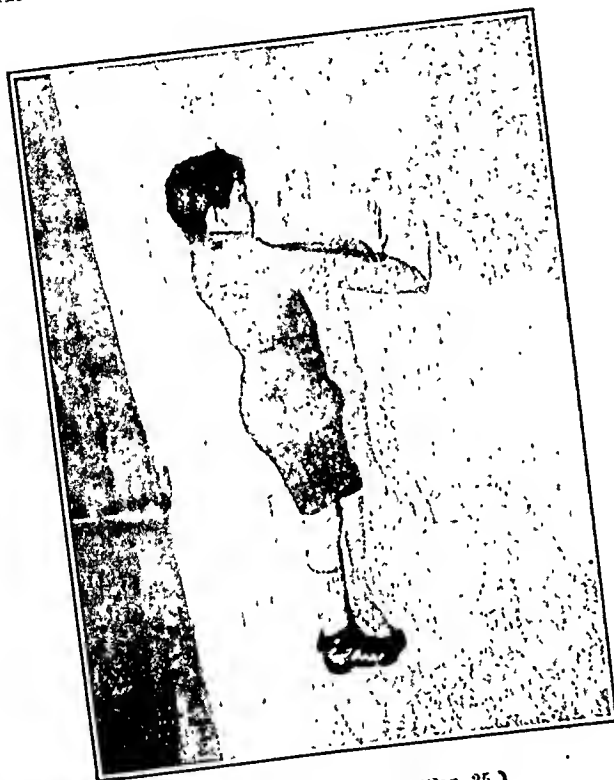
Instead of legs, one knee or both the knees may be raised.

C. FRONT HAND LYINGS.

Hand Lying And Arms Bending.

1. To the front hand lying position—down !

Arms—stretch !



Front Hand Lying.—(FIG. 25.)

The body is lowered close to the ground by bending the arms.

Arms—stretch!

The starting position is resumed by straightening the arms, the position of the body remaining unaltered all the time.

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2. *Hand Lying And Leg Raising.*

(From the hand lying position) left leg—Raise!

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The left leg is raised as high as possible, toe pointed, knee fully stretched, the whole position of the body remaining unaltered.

Leg—lower!

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The leg is lowered to the starting position.

3. *Hand Lying And Arm Raising Forward And Upward.*

(From the hand lying position) Left arm—raise!

3.

The left arm is steadily raised without altering the position of the body more than is absolutely necessary.

Arms—lower!

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4. *Free Front Hand Lying And Knee Stretching.*

On the hands—1-2 or

4.

Your sitting position—down!

tl

The knees are bent quickly outward, the trunk is inclined slightly forward, and the palms of the hands are placed on the ground.

D. GAME-LIKE EXERCISES.

1. *Beating the Drums.*

(a) Back Lying beating the big drum with straight legs (slowly).

(b) Crook back lying beating the small drum (quickly).

2. *Seal Walk.*

Front hand lying walking forward on hands, dragging the feet along.

3. *Stretch Back Lying, Cycling.*

When the pupils are in the stretch back lying position the teacher commands:—

Cycling begin ! Halt !

The knees are raised and the legs are moved in the same way as in cycling.

4. *Hare Hopping.*

From spring sitting position the children throw themselves as far as forward as possible on hands and feet.

5. *Pushing to the wall.*

The children stand in two lines facing each other. The left foot is placed forward as in a lunging with the knee bent. The pairs put hands on each others shoulders. On command, each tries to push the other over towards the wall.

6. *Four-Standing, Foot Throwing Backward.*

Four standing position—down.

Leg throwing backward—1-2.

On 1, the feet are thrown as far backward as possible, on 2, they are brought forward again.

XII.—DORSAL EXERCISES.

Dorsal exercises bring into play and develop all those muscles that lie all along the spine from the pelvis to the head. These muscles are specially employed in holding the spine erect

and are thus of particular importance in correcting and maintaining the carriage of the body and head.

The correct carriage of the spinal column being a matter of importance, particular attention should be paid to developing the dorsal muscles which play such an important part in maintaining graceful body.

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Many dorsal exercises have a strong effect on the muscles at the back of the thigh which are attached to the pelvis. If these muscles are too weak, as is sometimes the case, they tend to alter the inclination of the pelvis and consequently have an injurious effects on the carriage.

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Trunk Bending Forward.-- (FIG. 26.)

A. Trunk Bending Downward.

Trunk Bending.

Hands on hips—place !

Trunk forward—bend ! (FIG. 26.)

Downward—bend ! (FIG. 27.)

Ankle—Grasp !

The body is inclined downward from the hips as far back as possible, the knee remaining stretched all the time.

Forward—stretch !



Trunk Bending Downward.—(FIG. 27.)
(With Ankle Grasping.)

The trunk is brought forward to the lean position without any movement taking place in the hip—joints as it is straightened slightly from above downwards—i. e. neck and chest first, loin last.

positio

Upward—raise ! Hands—down !

2. Q

N.B.—With fairly well-trained pupils, trunk bending forward and trunk bending downward can be taken on one command.

Precautions :—

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1. The knee must remain stretched in the downward bending.

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2. In the stretching forward the arms should come up in continuation of the body.

3.

3. In the forward stretching the hip-joints should keep their bending and there should be no hollowing of the back.

B. FRONT LYING.

in

Wing (Stretch) Fixed Arch Front Lying Trunk Leaning Forward.

4.

In the absence of wall bars, support may be given by a neighbour. The class may be divided into two lines ; one line runs for support.

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Stools—ready !

This line for support, this line taking the stools for front lying—place !

Each places the stool in front of himself and his neighbour stands ready for support.

Front lying--place !

All quickly lie down over the stools so that they are resting on their thighs with the knees and the lower part of the trunk free. The feet are supported by a neighbouring pupil.

The hands rest on the ground.

Arms forward--stretch ! Trunk forward--lean !

The leaning must, as usual, take place in the hip joints ; the pupils should try to keep the backward bending of the trunk. The arms are laid on the ground and the chest is pressed downward.

On the hands--support !

The trunk is lowered slowly and the hands put on the ground.

From position--up !

The erect position is taken quickly.

N. B.—This exercise can be taken from the different positions of the hand e. g. stretch, yard, bend and drag.

The following may also be added :—

1. Trunk backward--stretch !
2. Forward--stretch !

The precautions are as dealt with previously.

C.—LUNGING FORWARD.

Bend Front Lunge Standing, Arm Stretching Sideways.

Bend front lunge position is taken in the way already described.

Arm stretching sideways—upward 1-2, with hands placing on hips, foot changing—1-2, and so on.

Finally : stand—erect !

Lunge Standing, Foot Placing Backward On The Toe Support.

Hands on hips—place !

With a lunge, left foot backward on the toe—place !

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The weight of the body is kept on the right leg which should be well bent. The toe of the left foot should be placed on the ground four foot lengths to the rear. The toe should be used merely to gain steadiness.

Foot changing—1-2.

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On 1, the left foot is drawn forward to the right ; at the same time, the trunk is raised, still held in continuation of the left leg.

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On 2, the right foot is moved back in the same way
Stand—erect !

D.—GAME-LIKE EXERCISES.

3.

1. *Rocking Chairs.*

Stretch arch front lying on the front—down !

Arms upward—stretch !

Alternate arms and legs raising—begin !

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The body is put into a rocking movement.

4.

2. *Log Raising :—*

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The children stand in two lines. No. ones are 'logs' lying stiff on the back and No. twos pull them up to stand.

XIII.—GENERAL AGILITY EXERCISES.

A. MARCHING & RUNNING..

This group of exercises is very enjoyable to children below 14 years of age and include chiefly walking, running and marching.

The purpose of these exercises is partly to give a sort of relief in the strenuous gymnastic lesson and partly to give the pupils some training in speed, skill and co-operation with others. Strenuous marching and running are given in the chapter on athletics.

Good marching should be light and elastic. It should, at the same time call for alertness, a sense of rhythm and control postures. The head and body are held erect, the arms swing freely straight forward and backward by a slight movement in the elbows, the left arm moving with the right leg and *vice-versa*. The marching should be brisk and purposeful; all the pupils must put the foot on the ground simultaneously so that the sound of the feet is short and sharply defined.

Ordinary Marching

In ordinary marching, either quick or slow, the legs are swung forward alternately, freely and naturally, from the hip joints: each leg, as it swings forward, is bent sufficiently at the knee to enable the foot to clear the ground. The foot should be carried straight to the front and placed firmly upon the ground with the knee straight.

The arms should swing freely and naturally from the shoulders, the right arm swinging forward with the left leg and *vice, versa*.

The body should be maintained as erect as possible and is well balanced over the legs and carried evenly forward without swaying from side to side, and with head erect.

Command :

Forward—march ! left ! right ! etc.

Marking time.

Each foot is raised alternately about six inches from the ground. The feet are kept almost parallel to each other and the knees are bent upward.

Not suitable to children below 12 years of age for running and marching.

About Turning, During March.

Right about—turn ! 1-2-3-4.

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The command is given as the left foot comes to the ground. On 1 and 2, two more steps are taken with the right and left feet. The last step should be quite short and as the left foot is placed down, the count 3 is given for raising the heels and turning right about on the toes ; at 4, a step forward is taken with the left foot in the new direction.

Wheeling During March.

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Right (or left)—wheel !

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The leader of the file makes a curve so that the direction is changed 90°

In right (or left) about—wheel !

3.

The leader changes direction of 180 degrees.

Marching On The Toes.

Heels—raise !

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The command can be given when the class is marching in slow or quick steps or when the class is standing.

4

Class—halt ! 1-2-3.

1

On 1, a step is taken with the left foot on the toe ; on 2, the right foot is brought up to the left ; and, on 3, the heels are lowered to the erect position.

Marching With Knee Raising.

The knees are raised alternately until the thigh is at right angles to the body with the toe pointing downward and the class move forward rather more slowly than in ordinary marching.

Command :

Knees—raise ! (from ordinary marching).

With knee raising forward—march ! (from standing position).

Marching Sideways.

Sideways to the left—march !

As the heels are raised the left foot is moved a short step straight sideways ; the right foot pushes off and is closed up to the left. Marching sideways is done lightly with stretched knees and on the toes. The time is a little quicker than in ordinary marching.

Class—halt !

Precautions :—

1. The heels must be brought together at every step.
2. The knees must be kept straight.

Marching Backwards.

Backward—march !

As the heels are raised the left foot is moved a good foot length backward. The knees are kept almost stretched in the marching, the body well straightened and the arms still.

Class—halt !

The executive word falls as a foot is put on the ground. The other foot then takes a step ; when the feet are together the heels are lowered.

Hop March.

On the left foot—hop !

A hop on the left foot is taken on command, the body being kept as erect and steady as possible. The free leg should hang easily with straight knee.

Feet—change!

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The right leg is swung forward and a hop is taken on the right foot.

On alternate feet—hop!

twist

As soon as the left foot comes to the ground a hop on that foot is taken and then the right foot is swung forward and after a full pace a hop on that foot is taken and so on, care being taken that the body is maintained steady and the shoulders square to the front.

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Variations :—

3.

1. Hop march with knee raising.
2. " " " leg raised forward.
3. " " " foot raised behind.

Marching With Stamping And Clapping.

With stamping and clapping, forward—march ! halt!

inv

Heel And Toe March.

4.

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To begin with, the left leg is moved forward with straight knee and while the foot is bent upward the heel is put on the floor with a slight bending of the right knee; as this knee is stretched the left foot is moved back to the toe support position; then an ordinary step changing is taken with the left foot in front. After this the right foot is put forward on the heel, and so on.

1

War Dance.

* This is a kind of knee raising march, but while the left knee is raised high up, a little hop is taken on the right foot

and the right arm is swung forward, bent at the elbow until the upper arm is about horizontal and the fore-arm vertical.

Kick March.

With kicking steps, forward—march !

The left foot is placed forward as quickly as possible with a strong stretching of the knee and the ankle, the toes slightly above the ground. The body should be well balanced by the rear foot, the back being well straightened, the head raised and arms steady.

The time must be slow for the march and maintained exactly so that all stretch the legs forward at the same moment.

Ready—halt ! to ordinary marching—change !

N. B.—The executive word should fall when the foot is stretched forward.

Precautions :—

1. As the leg is carried forward the pelvis should be held back otherwise the loin will be hollowed and the back rounded.
2. The foot should be thrown well forward but not raised too high, the arms remaining still by the sides.

Running is perhaps the most valuable of all the physical exercises found for small children. It is natural for the children to run, but its educational value in training them to lightness, activity, ease and quickness of movement is, at the same time, very great. It is also the simplest way, when taken carefully and progressively, of training the heart and lungs and has thus a very practical value in increasing the power of endurance.

Generally, running should be taken out-of-doors specially in the form of games. In the gymnasium either open or covered, emphasis should be laid on training beautiful form and lightness in running.

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The gymnastic run should be taken on toes; running on foot may be most economical of energy, but when the object is to develop the ability of running, and not to use the run for one or another practical end, it should be taken on toes. This form gives most work to the calf muscles and thus trains them to yield their best work.

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Halt must not be commanded immediately after a strenuous run. Ordinary marching should be taken for a while as a depleting exercise so that breathing may be calmed little by little. The following running exercises are useful for children:—

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1. Ordinary running.
2. Running with knee raising.
3. Running sideways.
4. Running with steps changing.
5. About turning during running.
6. Wheeling during running.
7. Running on the spot.
8. Follow the leader.
9. Running sideways in a ring with chain grasp.

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The exercises of this group are among the liveliest in the gymnastic lesson. To jumps belong introductory jumps long, deep and high jumps. Heave jumps and vaulting are added to this group. These terms are applied to those exercises in which the hands and arms are used for supporting the weight of the body

Jumping and
Vaulting.

on some apparatus during their execution. The free forms of instructional and recreative jumping exercises are suitable for young children from whom precision and style are not to be looked for. The aim should be to teach children to jump vigorously and to land with plenty of knee bending.

All jumping and vaulting exercises consist of the following parts.

1. Preliminary run.
2. The take-off.
3. Actual jump.
4. The landing.

1. THE RUN.

Most of the jumps require a forward movement which necessitates a run. The run begins from the erect position with a heel raising and a few walking steps. The speed must increase. The nearer the pupil comes to the place for the jump.

In the early stages of training the run should not, therefore, be for more than three paces and should be commenced with the foot from which it is intended to jump. Later on, the distance should be increased.

In jumping "heights" the run should be short and in jumping "lengths" the jump should be long enough to obtain top-most speed at the "take off" in order to gain the necessary forward impetus.

2. THE TAKE-OFF.

The "take-off" can either be from one foot as in the high and long jumps, or from both feet as in most vaults. It is made up of quick bending followed by an immediate and powerful stretching of the hip, knee and ankle-joints,

and, in training, should always be taken from the fore part of the feet, but without any stiffness of the ankle. It must always be taken on the toes; this must specially be observed after a run, or the landing will be heavy.

In all jumping off one foot, the left and right feet must be used alternately. In "taking off" from one foot the jump is, as it were, a continuation of the run, but in jumping off both feet, the last pace of run consist of a sort of preparatory jump, taken with the object of bringing both feet together for the spring.

This preparatory jump should be short and quick so as to reserve as much of the power as possible for the actual jump or vault.

3. THE JUMP.

The jump begins as the feet leave the ground and finishes at the instant they again touch it. Just before the feet meet the ground at the end of the jump or vault the body should be stretched although at the moment of landing the legs should be free from stiffness and ready to bend at once.

4. THE LANDING

In "landing" the toes must meet the ground first and the fall of the body must be stopped gradually, as the ankles, knees and hip joints yield softly at the moment of impact. The knees should be bent to about a right angle and kept well out, the feet at the normal foot angle, heels together and raised, arms at the sides, trunk vertical and head erect. The knees should then be straightened nearly as quickly as they were bent and the heels lowered.

Standing Jumping, Forward.

Jumping forward—1-2-3-4-5, or go !

While the knees are bent in the second movement, the body is inclined a little forward, the arms are moved back to the drag position. When the "taking off" is taken, the arms are swung strongly forward to about reach position to assist the movement forward in the jump, and are then brought quickly down to the sides again.

N. B.—This jump can be taken in mass or individually. In the former case, correct form and steadiness are more important than the length of the jump; in the latter case, the length of the jump may be measured.

Wing, Toe Standing. Astride Jumping.

Hands on hips—place! heels—raise!

Astride jumping—go! ready—halt.

The take off is mainly done by a bending and the stretching of the ankles. The knees are kept nearly straight, the trunk well-straightened. Halt falls when the feet are together, after which a jump is taken with the feet apart, then together, then the heels are lowered.

This exercise can be combined with arm swinging sideways when the feet go apart, and downward as they were brought together again, instead of having hands on hips.

Hopping, With Leg Swinging Sideways, And An Intermediate Hop.

Hands on hips—place! heels—raise!

Hopping with leg swinging sideways and an intermediate hop—go! halt!

While one leg swings sideways, a hop is taken on the other foot, the feet being changed in time.

Different hand movements may be combined with astride jumping.

Deep Jump Forward. With Single And Double Take Off.

- (i) On the stool—up! throwing the left foot forward, deep jump forward—go !

The left leg is swing forward fully stretched in the knee and ankle and the right knee is a little bent just before the "take off." In the jump the body should always remain well straightened and move in a curve upward and forward from the apparatus.

- (ii) With double take off, deep jump forward—go !

After a slight and quick knee bending a double "take off" is taken. As, in the previous case, the body should be strongly straightened during the jump and be moved in a curve upward and forward : the legs are held well back, so that the body may not fall backward in the landing.

Precautions :—

1. The foot which has been thrown forward should be still, before the 'take off' is taken.
2. The head and the pelvis should remain in their position as the body is straightened in the jump.
3. The body should not be raised in the "take off."

BROAD JUMPS.

1. *Standing Broad Jump.*

In this jump the 'take off' may be taken from the box or the like.

2. *Short Broad Jump.*

This jump is taken after a short run and the form and the distance are most important in this case.

3. *Longer Broad Jump.*

The aim here, is to get as far as possible. The legs are kept forward by a strong knee raising. These jumps require a long preparatory run and are very suitable for training a strong and quick run.

4. *Running Jump.*

A running jump is a short broad jump where the landing is taken on one foot and the running is continued.

5. *Three Standing Broad Jumps.*

This event is exactly like the standing long jump, except that instead of stopping when he lands, the contestant jumps immediately making a second and then a third jump.

Standing, Jumping Upward.

Jumping, upward—1-2-3-4-5.

On 1, the heels are quickly raised ; on 2, the knees are sharply bent and, on 3, a "take off" is taken. The body and the legs are fully extended ; the head and the legs are pressed a little backward, the ankles stretched. When the feet again touch the ground the ankles, knees and hip-joints yield gently until spring standing position is reached. On 4, there is a quick knee stretching, and, on 5, heels are lowered.

When the jump has been practised by numbers, it is taken in time as far as the landing, so that the pupils stop in the knee bending. The command for the jump then is : Stopping in the landing, one jump upward—go ! stretch—lower !

Precautions :—

1. The body, the knees and the ankles must be stretched sufficiently.

2. The landing should be light.
3. The first two movements should be quick.

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During this movement the balance of the body must be steady, so that the exact erect position can be taken before the pupil leaves the landing place. The legs should work like a spring, at first compressed by the weight on landing and then extended for the recovery.

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In some jumping and vaulting exercises the landing comes on one foot. In this case, there can be but a slight bending in the hip, knee and ankle joints of the leg on which landing is taken. The pelvis is, consequently, lowered on the opposite side and thus gives quite an important amount of spring. Besides this, the other leg is brought up so quickly that it can also help to break the fall.

It is essential that a correct method of landing should be acquired, as it is in the landing that accident is likely to occur owing to faulty methods.

Front High Jump.

Front high jump with 1 (2, 3) step, beginning with the left—1-2-3-4 or go!

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The knees are bent quickly high up after the take-off while the back is kept as straight and vertical as possible. To counter-balance the raising forward of the legs and as a help to lifting the body, the arms are swung simultaneously forward slightly bent. As soon as the rope is crossed, the knees are stretched and the back fully straightened out, while the arms are brought down to the sides.

These small jumps should be correctly performed in all their details without any special attention being paid to the height. To give much practice to the pupils, several pupils can jump at the same time if the rope is long enough.

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Front High Jump With Free Run

Performed as previously except that the pupil takes his own distance running with just enough speed to give the proper impetus to the body. If a pupil finds it difficult to take off with a particular foot, he must train himself to be able to do this most easily, if, for some time, he jumps only off that foot.

Oblique High Jump.

The pupil stands a little obliquely to the rope. If 1 or 3 steps are taken he begins with the foot which is farther from the rope; if two steps, with the foot nearer the rope. In the last step just before the jump is made, the hands are sharply brought a little behind the sides: then after a strong "take off" the leg nearer the rope is swung over, then the other leg, both being kept fully stretched in knee and ankle. As the first leg is swung forward the arms are simultaneously brought forward and maintained in the horizontal position till the first leg is swung down and the other up and then lowered together with the latter.

Skip Jump.

The children grasp the ends of their ropes in such a way that each rope is long enough to reach the feet easily. The rope is then swung chiefly by the movement in the wrists, while the elbows are held comparatively still, but bent, and into the sides. The children should spring lightly up and down on toes without pause between the movements, either with the feet close together or with heels only touching. The body and legs should be stretched in the air. The knees yield gently on landing. The jump or hop over the rope, as it passes the ground, can be taken forward or backward with feet together or on one foot with or without an intermediate jump or hop on the spot, or with advancing forward.

Running Seven Jumps.

Eight chalk lines are drawn on the floor each at a longer distance than the other. The children are to run over each of the lines either in teams or individually.

N. B.—The young children enjoy jumps very much. They aim at teaching children, from the first, the proper use of the springy stretching power of their legs in the "take off" as well as the springy natural "give" in landing. In the beginning the children should be encouraged to jump in free style until this purpose has been attained : later on, good carriage, while jumping, is insisted on and should be developed partly by the teacher showing them how it could be done and partly by the use of imaginative expression.

GAME-LIKE EXERCISE.

Leap Frog.

This is a vaulting exercise in which a child takes the place of a vaulting apparatus.

This exercise may not be attempted until the children have acquired a powerful spring and a good style in the jump and landing : they should also be trained how to use their arms to secure right execution. To clear the obstacle the body must be projected forward and in order to restore the erect position for landing, the arms must thrust down on the obstacle as the body passes over it in order to check the movement of the trunk and allow the legs to swing forward. If sufficient running has been taken, the hands will only need to remain on the 'back' for a movement and thrust will be directly downward without any tendency to upset the back. As the back is cleared, the body is stretched strongly up, head lifted and legs brought together for landing.

Precautions.—The legs should be separated as much as possible while clearing off the back.

C. OTHER FORMS OF AGILITY EXERCISES.

The agility exercises we have given here are such as can easily be taken either on grass or on mat. These exercises are like jumps very attractive and are very much liked by the

children, the main advantages being that they can be done in open air and do not require any apparatus or gymnasium.

Forward Rolling.

It can be done on soft soil, grass or mat. This exercise can better be practised from stride standing position with a wide distance between their feet. Rolling should be done smoothly, but the standing should be preceded by a strong stretching of the legs.

Backward Rolling.

The children must bend properly in the knees bringing the head well forward in order to get round easily.

Head Standing Position.

The hands are placed on the floor to a little more than a shoulder breadth distance. The crown of the head is put so much in front of the hands as to make the lines between the head and hands about an equilateral triangle. The trunk is drawn over the floor by a push-off with the hands while the hip joints are strongly bent and the feet with stretch ankles pass along the ground. When the trunk is so far over that the feet tend to leave the ground, the legs are gradually raised upward till they are almost vertical and are in continuation of the trunk.

In the return movement the legs are lowered slowly in the same direction.

Hand Standing With Living Support.

To begin with the pupils should help each other in pairs. The one who is to take hand standing position puts his hands on the floor and puts one leg backward while the other is bent.

The helper stands near with his forward foot near his comrad's hands. While the latter takes off with the feet the

helper grasps him round the hips and helps him up on his hands. The figure shows the final position.



Hand Standing.—(Fig. 29.)

If the hand standing is to be taken against a wall one or two children may be asked to support the one who is doing the exercise.

The following are very interesting but rather difficult exercises and may be done by advanced pupils only.

1. Walking on Hands.
2. Stretch Stride Standing, Cartwheeling.
3. Standing Overswing with Double Take-off and Head Support (Head Spring).

4. Standing Overswing with Single Take-off (Hand Spring).
5. Overswing With Double Take-off.
6. Back Spring.
7. Backward Rolling to Hand Standing Position.

XIV. BREATHING EXERCISES.

Breathing exercises consist of deep inspirations and expirations taken together as a rule. This facilitates the expansion and contraction of chest walls.

Advantages:—

- (i) Many children breathe wrongly and, but for these exercises, they would never have had an occasion of knowing their mistake.
- (ii) They improve the circulation of the blood.
- (iii) Lungs improve like other organs of the body on exercise.
- (iv) They improve the general carriage of the body.
- (v) They have a marked influence on the power of speaking and singing.

Breathing exercises must give practice in breathing through the nose, care being taken that both the inspiration and expiration are made as deep as possible.

According to the old Indian system of exercises known as Pranayam, the 'breathing in' is done slowly and through the nose; the 'breathing out' is also done through the nose and as gently as possible; but in the Swedish system, the expiration is done quickly and through the mouth. Every body, however, believes that deep breathing exercises are necessary for enlarging the capacity of the lungs. They are particularly beneficial

after some strenuous exercise which enhances the demand for oxygen. The teacher should, therefore, see that no child holds up his breath while he makes some physical exertion, specially when the class is performing some abdominal exercises.

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According to Mr. Niel Bukh the well-known Danish Physical Educationist, no separate breathing exercise is necessary, the exercises coming towards the end of the lesson should be such as would give plenty of breathing exercise. The views about breathing exercises are so conflicting at present that that we cannot pass any definite opinion. Our own experience and subsequent researches in this direction, will enable us to know how far separate breathing exercises are necessary for our school children, but we are inclined to think that a short breathing exercise towards the end of a gymnastic lesson is desirable.

1. *Deep Breathing, Arm Raising Sideways.*

Arms raising and lowering with deep breathing—begin ! stop !

Standing in good position the child should raise the arms to the shoulder level during inspiration and lower them during expiration. The breathing in must be done either through the nose or through the mouth as the circumstances demand, but the breath ought to be held for some time and breathing must be deep.

2. *Deep Breathing, Palm Turning.*

Deep breathing with palms turning—begin ! stop !

The class stands with hands down by the sides, the palms are turned forward, while the shoulder joints are rotated outward the head is pressed forward and a deep breath is taken in. During expiration the hands and head are returned to normal position.

3. *Deep Breathing, Head Bending Backward.*

Deep breathing with head bending backward—begin ! stop !

The class stands with the hands down by the side. On command, the head is bent backward and deep breath is taken. The head is raised with deep expiration.

4. *Deep Breathing, Arm Raising Forward, Parting Sideways and Lowering.*

Arms forward—raise ! arms parting sideways—inhale ! On arms lowering—exhale !

The arms are raised forward to the shoulder level. Then with deep breath they are parted sideways with pectoral muscles stretched and chest fully expanded. Breathing out is taken when the hands are lowered sideways.

5. *Deep Breathing, Arm Raising Sideways And Knee Half Bending.*

Deep breathing sideways and knees half bending—inhale ! Arms lowering and knees stretching—exhale.

N. B.—It is advisable that every child takes his own time of inhaling and exhaling, but deep breath must be taken.

IMAGINATIVE EXERCISES FOR YOUNG CHILDREN.

1. *Blowing yourself up like a balloon.*

N. B.—Clasp your hands on your chest. Show who can make the biggest balloon. Each child may lie and breathe quietly in his own time. Meanwhile, the teacher may go round and look if any one is contracting himself or holding his breath and teach him to breathe properly.

2. *Blowing a candle.*

Each child suppose that a candle is burning in front of him and he is to blow it out. The teacher should point out to the class that deep breath should be taken and it should blow out as much as possible.

3. *Smelling a rose.*

CHAPTER IV.

GAMES SUITABLE FOR BREAKS.

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1. Using Open File Formation.

1. *Thread the Needle.*

Join hands and put one leg through.

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2. *Hug the Knee.*

Clasp the hands round the knee and bring it as close to the body as possible, keeping an erect position of trunk and standing leg.

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3. *Running on the Spot.*

(a) Running on the spot.

(b) Running on the spot with high knee raising in front.

(c) Running on the spot with foot lifting high behind.

(d) Combinations and variations of these.

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4. *Jumps.*

4.

(a) Jumps on the spot and moving backward, forward or sideways.

(b) Round about jumping, turning 360° at one jump.

(c) Jumps to face specified directions.

(d) On teacher calling out a direction (North, South, East West), the children with a jump not turning properly or turning late are "out".

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(e) JACK IN THE BOX.
Jump up like this.

Children repeat this whilst jumping from knee bend position high up into air and back again to knee bend position.

5. (a) As tall as a camel.
(b) As small as a mouse.
(c) As wide as the Ganges.

6. *I say Stoop.*

The teacher does a quick knee bending and, up again, says "I say, stoop". The children imitate. If on saying "I say, stand", the teacher still doing the knee bend and up, some children perform the stooping action, they are *out*. This should only be taken for a very short time.

7. *Do this, do that.*

All the players stand or sit facing their teacher. The teacher assumes any easy gymnastic position, e. g. trunk bending or arm movements, at the same time, saying "Do this" and the others immediately imitate. Should the teacher, at any time, say "Do that" instead of "Do this". Any player who imitates the action performed is *out*. The teacher may fix the time and, in the end, those boys who are left may be awarded one point for their team.

8. *Odd Files round Even Files.*

1. First file race round second and third round fourth and vice, versa.

2. First file serpentine in and out of second and third in fourth and vice, versa.

9. *Odd Numbers round Even Numbers.*

1. Children in first and third files slip round the corresponding children in second and fourth and back to places.

10. *Ranks join hands.*

- (a) Slipping steps sideways until the leader touches end wall.
- (b) Slipping steps sideways until the leader touches one end wall and slips back to open places in ranks.
- (c) Slipping steps sideways, the leader touches end wall, slips until last child touches other wall and back again into places in ranks.

11. *Catch your Partner.*

- (a) At whistle those in first file catch partner in second and those in the third catch partner in fourth : and vice versa.
- (b) In two circles, one circle running to the right, other to the left : on whistle catch partner.

12. *Under the Arch Bridge.*

Teams join hands and last two boys make arch by holding up joined hands. On signal, rest of boys run under arch without breaking hands.

Variations.—Arch may be formed by any two members of the team. Both parts of the team run under simultaneously.

13. *Somersault Forward.*

On signal, all tuck heads well in and somersault forward and stand up.

14. *War Dance.*

War dance on spot. On signal, take cross legged sitting position.

15. *Pull Up.*

Teams face in cross legged sitting position. Opponents place hands on each others' shoulders and try to pull each other on to feet.

16. *Coffee Grinding.*

Teams face each other. Grasp partners' hands and hold them above head. On signal, both turn in under hands in given direction and turn completely round holding hands all the time.

17. *Weighing Salt.*

Teams back to back and link elbows clasping hands in front of body. Each leans forward in turn and lift his partner. The one lifted should raise the knees.

II.—USING OTHER FORMATIONS.

1. *Team Circles.*

Teams make small circles in specified corners of the play ground "See who is first."

- (a) Hands joined.
- (b) Hands joined and one knee in bending position.
- (c) Hands joined backs to centre.
- (d) Cross legged sitting hands joined.
- (e) Long sitting hands joined.
- (f) Long sitting backs to centre.
- (g) Circles changing places at whistle.

2. Make a large circle and skip or slip round, singing a rhyme. At whistle, back to files,

3. *Large Circle.*

Number off in threes. When a number is called, the children run round outside the circle clockwise to their own places again "See who is first".

4. *Double Circle.*

Each run opposite ways.

(a) Places in 4 files at whistle.

(b) Change direction at whistle.

(c) Take partner and skip in double files at whistle.

(d) Catch partner at whistle.

5. *Catch the Tail.*

Two files, one down one side of the playground, one down the other. Arms round the waist of one in front. The first child in each is the "head" and the last in each is the "tail". Both files face clockwise. At whistle, all run following the leader and each "head" tries to catch the "tail" in front. Whistle may blow for all to turn and run the other way.

6. *Needle and Thread.*

Small circles (two or four) hands joined leaving one break. The leader (the thread) runs round with others following, and under the arch made by the last two, who stand still (the needle). When all are through, the hands are joined to make the complete circle.

7. *Wind up the Bobbin.*

Two or more groups. The groups join hands. The first child is the leader and the last child the bobbin. At command, the line following the leader winds itself in a maze round the bobbin, who stands still. When wound up tightly, the bobbin can be unwound again.

8. *Knee-bending on Whistle.*

On command, the children join hands and dance round and round. Directly the whistle is sounded, the children do full or half knee bending as the teacher desires. The one who is last or who does the exercise badly goes out. The game continues until only a few are left in.

9. *Open and Close Bar.*

Teams form large circle with hands joined and run into close and out to open.

10. *Wooden Man.*

The body is held very stiff. Children run, either on spot or in given direction with straight arms and legs.

11. *Hopping Wrestle.*

Teams face each other, hold up one foot behind and endeavour to make opponent put a foot down by pulling, pushing etc., with free hands.

12. *Back to Back Run.*

Pupils link arms back to back and run, in pairs, a given distance,

13. *Disperse and run back to places.*

To wall and back—go

14. *Form file on leader.*

Place leaders first ; behind your leader run.

15. *Crossing the Brook.*

A place representing a brook is marked off by two lines on the ground at a distance of about two feet. The players follow their leader, run in groups and try to jump across the brook. Those who succeed run onward and try to jump a brook of greater

width. Those who fail go home to dry their clothes and are *out*. The successful ones are led to wider places in the brook to jump until that point is reached at which only a few can jump successfully.

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N. B.—This is a very useful game for our country children. Some baskets or mats or even a chalk line may represent the brook.

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This game may also be played as a team game by making 4 or 6 groups of children and then giving one mark in the end for each child who successfully jumps the last brook.

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16. *Catch and Pull.*

Teams face each other and try to pull opponents over to given lines.

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17. *Rabbit Hop.*

Hands and feet on floor, move hands and draw up feet. Sit up on whistle.

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18. *Crow Hop.*

Full knee bend position, hop about on whistle fly by springing forward with legs together, beating arms to side.

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19. *Touch wood, &c.*

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Children disperse and touch object mentioned.

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20. *Somersault over Back.*

One boy on hands and knees. Another boy places hands on floor close to former, and turns somersault over the back of the kneeling boy coming to his feet on other side.

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21. *Wheelbarrow Race.*

No. 1 in front hand lying position. No. 2 takes his feet in hand. Both run forward.

22. *Obstinate Wheelbarrow.*

No. 1 in front hand lying position. No. 2 places No. 1's legs round his waist. No. 1 locks legs. No. 2 places his hands under No. 1's thighs and tries to move him forward, No. 1 resists.

23. *Rowing on Land.*

The leader of each team faces all the players of his team and pulls the player next to him. Each player of the team holds the player in front of him with arms straight. As the leader pulls up and down all the players move forward and backward and the movements continue rhythmically as in actual rowing.

CHAPTER V.

Tables of Exercises.

RULES FOR MAKING TABLES.

The length of an ordinary lesson in physical training is about twenty minutes in the elementary schools of England, but in a tropical country like India where the children live on frugal diet and have to perform the exercises in much warmer climate, at least half and an hour's time should be given to young boys and 40 to 45 minute's time, to higher classes. Only a few minutes are enough for preliminary exercises and a couple of minutes for final ones. The principal exercises should take the major part of the time, agility exercises and games should together take as much time as all the formal exercises.

Depleting Exercises.

The hardships imposed by formal exercises and the close attention required for their performance will soon cause fatigue and, therefore, the teacher should give some calming and soothing exercises, after work involving much exertion is done. Such exercises called "depleting exercises" make the circulation easier and equalize the distribution of blood which has accumulated in strongly working organs. In this way, these exercises help to remove the results of the momentary efforts and make it possible to go on quickly to a new exercise without danger of overworking the pupils. They are given in the specimen tables at the right places ; but the teacher should be in a position to know the strength of his pupils and should introduce them in his lesson accordingly.

Depleting exercises alone are not enough, specially in the case of young children, to give immediate relief after some strenuous work is done. It is, therefore, desirable that at least two breaks are given in half an hour's lesson. In hot or rainy season more breaks are necessary. In the 'break' the class should preferably disperse, but the children may run direct from their places in "open order" and back to them again when the class reforms. In order to retain the stimulus in the break, simple movements with frequent changes are necessary.

The tables, given in the syllabus of physical training for schools issued by the Board of Education, England, are nice specimens for our teachers, but we must remember that on account of hot climate an Indian boy reaches puberty about a year and a half earlier than an average European child. Moreover, an Indian boy is of more imaginative nature and, consequently, we have, here, given fifteen model tables for the guidance of our teachers. First five tables give a large number of imaginary exercises to suit the psychological conditions of our children. The remaining ten tables contain, with slight modification, Swedish exercises, but some of them are rendered less strenuous and more varied for the climatic reasons. We may, here, emphasize that the teacher should not use these tables mechanically. He must be in a position to make his own table to suit the requirements of his class.

Method of
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TABLE I.

FOR CHILDREN AGED 6, 7, & 8.

Time 30 minutes.

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1. Marching round with hand clapping.
Round the field—march !
Hand clapping—begin ! stop!
2. Noddin by the Children.
Nodding—begin ! stop !
3. Little Birds, Big Birds and Great Eagles.
The teacher may show the position of the hands in these cases and then give commands by number.
Little birds, Big birds and Great Eagles.
By numbers 1-2-3 ! hands—down !
4. A small popular running game like 'touch your partner'.
5. Tea Pot.
The teacher should show the position the children are to assume and then command as follows :—
To positions—come ! pour !
Change positions—pour !
6. Hare hopping Race.
7. Umbrella.
The teacher should show how to open an umbrella and how to close it.
Umbrella—open ! close !
Hands—change !—open ! close !
8. A fairly big game like 'til'.
9. Smelling a flower, and blowing out a candle.
Rose-smell ! candle—blow !
10. Dismissal.
With a clap—Go.

TABLE 2.

Time 30 minutes.

1. Marching up the centre in twos.

The teacher may divide the class in four rows.
Up the centre—march !

2. Cross sitting, head turning.

Legs across—sit !

Head turning by numbers 1-2-3-4.

3. Punching a balloon.

The teacher may first show how to punch a balloon, first
with left hand, then with right hand and finally with
both.

With your left hand balloon—punch ! stop !

With your right hand " " "

With your both hands " " "

4. Trees in the wind

The teacher may show to the class how the trees bend down
and rise when the wind blows.

Trees in the wind—1-2.

5. A small running game like 'touching the wall'.

6. Greeting like Japanese.

Like Japanese—greet ! stop !

7. A fairly long and difficult game like 'passing the bean bag'.

8. Smelling a rose and

Blowing out a candle.

9. Dismissal.

} Same as in Table 1.

TABLE 3.

Time 30 minutes.

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1. Bouncing balls—(a big jump first and then smaller and smaller ones—go ! stop !)

2. Trunk bending back and forward.

Trunk backward—bend ! stretch ! downward—bend !

3. Leg raising.

Left leg forward—raise ! lower !

Right leg " —raise ! lower !

Backward —raise ! lower !

4. Windmills. (Hand Circling).

With left hand first—begin ! stop ! change !

With both hands afterwards—(a-stride position).

5. Toe march with slight knee raising.

March—to toe marching—change ! halt !

6. Back lying chest raising.

On your back—down ! chest—raise ! lower !

7. Pulling contest.

N. B.—Two lines face each other grasping his opponents with both hands, each trying to pull the other to his own side.

Begin ! stop !

8. Simple ball games e. g. Arch Ball.

8. Standing deep breathing with head bending backward.

N. B.—Each child should take his own time.

10. Dismissal—Marching round the playground once or twice.

TABLE 4.

Time 30 minutes.

1. Slow Running in Large Circles.
Running—go ! stop !
2. Position of Attention and Ease.
Stand—erect ! stand—easy !
3. (Astride) Hand clapping Overhead.
Begin ! stop !
4. Ring grip cross sitting—sawing wood in couples.
Sawing—begin ! stop !
5. Touching all the walls and back—go !
6. Trunk bending backwards to grasp ankle.
Trunk downward—bend !
Ankles—grasp ! leave ! stretch !
7. Pushing contest.
Begin ! stop !
8. (Astride) Heel raising, Knee bending.
Heels—raise ! knee—bend ! stretch ! heels—lower !
9. A ball game e. g. Tunnel Ball.
10. An agility exercise e. g. Leap Frog.
11. (Astride) Standing deep breathing with palms turning.
12. Dismissal.

N. B.—Class standing in attention position with a step forward and clapping—go !

TABLE 5.

Time 30 minutes.

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1. Falling in.
In one line facing me—fall in !
2. Attention Position.
Class stand—erect !
3. Turning and Marching.
Left—turn ! quick—march !
In two rows facing me—come !
Class—halt !
1. (Astride) Arm sideways Position.
With a jump, feet astride and arms sideways—swing !
Leg together and arms downwards—swing !
5. Head dropping Forward.
Head forward—drop ! upward—stretch !
6. Trunk bending Sideways.
Trunk to the left—bend ! stretch !
„ to the right—bend ! stretch !
7. Standing on Toes.
Heels—raise ! left leg—raise ! lower ! right leg—raise !
8. Game—Bean Passing.
9. Back lying, Leg raising.
On your back—lie ! left leg—raise ! lower !
Right leg—raise ! lower !
Both Legs—raise ! lower !
10. Agility Exercise.
(a) Running under and skipping over a rope.
(b) Forward Rolling.
11. Breathing.
12. Dismissal.

} Same as in Table 4.

TABLE 6.

Time 40 minutes.

Children aged 9.10 & 11.

1. Order Exercises e. g., Falling in, Marching in Open order.
2. Head turning sideways.
Head to the left—turn ! forward—turn ! to the right—
turn ! forward—turn ! by numbers 1-2-3-4.
3. Arm swinging forward, stretching upwards and swinging
downwards.
Arms forward—swing ! upward—stretch !
Down ! (in two movements); or by numbers 1-2-3-4.
4. (Hips firm) Trunk bending sideways, forward, stretching
backwards.
Hips—firm ! trunk—forward—bend !
Upward—stretch !
Backward—bend ! by numbers 1-2-3-4.
Trunk to the left—bend !
Upward—stretch ! to the right—bend !
Upward—stretch ! 1-2-3-4.
5. Game e. g., Dodge ball.
6. Standing on toes, Leg raising sideways.
Heels—raise ! left leg sideways—raise ! lower !
Right leg sideways—raise ! lower ! by numbers 1-2-3-4.
7. Back lying Leg raising.
(Command same as before).
8. Agility Exercises.
(a) Standing Broad Jump.
(b) Running High Jump.
(c) Forward Rolling.
9. Breathing.
10. Dismissal.

TABLE 7.

Time 40 minutes.

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1. Order Exercises.
2. Hopping at the spot with hand swinging sideways.
3. Head dropping forward and stretching.
Head forward—drop ! stretch !
4. (Astride) Trunk bending and stretching.
Trunk downward—bend ! ankles—grasp (pull) !
5. Arm bending and stretching.
Arms—bend ! upward—stretch !
Arms—bend ! arms—down ! by numbers 1-2-3-4.
6. Heel raising and knee half bending.
Heels—raise ! knee—bend ! upward stretch !
Heels—lower ! by numbers 1-2-3-4.
7. Small Game-like Exercises.
(a) Jumping the widening brook.
(b) Stepping stones, hopping on one foot.
8. Back lying Chest raising.
9. Pulling and Pushing contest.
10. (Astride) Trunk twisting.
11. Agility Exercises.
(a) Hand standing with living support.
(b) Relay race.
12. Breathing.
13. Dismissal.

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TABLE 8.

Time 40 minutes.

1. Order Exercises.
2. Hopping at the spot with hand swinging forward—go! stop!
3. (Hands on thighs) Head pressing backward.
Hands on thighs—place !
Head backward —press !
Upward—stretch !
Hands—back !
4. Trunk bending sideways.
Hands under armpits—place !
Trunk to the left —bend ! back !
Trunk to the right—bend ! back ! by numbers 1-2-3-4.
5. A Game-like Exercises—
(a) Catching a partner.
(b) Stepping stones, jumping with both feet together.
6. Sitting, trunk bending backward and arm stretching upwards.
With cross legs—sit !
Arms—bend !
Upward—stretch !
Trunk backward—bend !
Upward—stretch !
Hands—down !
7. Alternate arm and leg raising sideways.
(From heel raised position)
Heels—raise ; left leg sideways—raise !
Right arms sideways—raise ! leg—back !
Arms—down ! heels—lower !
Similarly, for the other side.
8. Agility Exercises,
9. Breathing.
10. Dismissal,

TABLE 9.

Time 40 minutes.

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1. Order Exercises.

2. Astride jumping with hand swinging.
Go ! stop !

3. Head Pressing backward.

Head backward—press ! upward—stretch !

4. (a) Trunk bending with hands on thighs.

Hands on thighs—place !

Trunk downward—bend ! upward—stretch !

(b) Greeting like Japanese.

5. Game—like Exercises—

(a) Marching like Giants and Dwarfs.

(b) Marching with Full Knee Raising.

6. Span Bending.

N. B.—With living support if there are no wall bars.

7. (Astride) Trunk bending downward to grasp ankle.

8. Standing on toes, leg raising forward, backward and sideways.

9. Agility Exercises.

(a) Vaulting—(Ordinary jumping, if there is no apparatus)

(b) Hopping Relay

(c) Head Standing with Living Support.

12. Breathing.

11. Dismissal.

TABLE 10.

Time 40 minutes.

1. Order Exercises.

2. Running on the spot and halting in 4 movements.
Running on the spot—go! class—halt! 1-2-3-4.

3. (Hips firm) Head bending backward and forward.

4. Trunk bending forward with arm raising sideways and forward.
Trunk forward—bend! arms sideways—raise!
Upwards—raise! arms—lower!

5. Game-like Exercises.

(a) Marching with stamping the ground by left foot.
(b) Pulling and pushing contests.

6. (Kneeling) Trunk bending backward.
Kneel—down! trunk bending backward—press!
Upward—stretch! up!

7. Trunk bending forward, ankle grasping.

8. (Hips firm, astride) Heel raising and full knee bending.

9. (Astride, head rest) Trunk twisting.
Left leg sideways—place! head—rest!
Trunk to the left—twist! back!
to the right—twist! back!
By numbers—1-2-3-4.

10. Agility Exercises.

11. Game.

12. Breathing.

13. Dismissal.

TABLE 11.

*Time 45 minutes,**Children aged 12 and above.*

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1. Order Exercises.
2. Astride jumping with hands swinging.
3. (Hands on thighs) Head pressing backward.
4. (Astide); Trunk bending forward with arm raising side-ways and forward.
5. Arm across bending.
Arms sideways—raise ! arms across—bend !
Arms—fling !
6. Hips firm, knee raising.
Hips—firm ! left knee—raise ! knee—lower !
Right knee—raise ! knee—lower !
7. A game-like exercise.
(a) Marching with knee raising and alternate hand swinging forward.
(b) Tug of war with one hand.
8. Back lying with leg raising.
9. (Hips firm) Hand circle:
Hips firm ! left hand—circle ! to right arm—change !
Both hands—begin !
10. Agility Exercises.
(a) Somersault.
(b) Progressive dodge ball.
11. Breathing.
12. Dismissal.

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TABLE 12.

Time 45 minutes.

1. Order Exercises.
2. Hopping on spot, with one leg forward.
Left leg forward—raise ! hopping—begin !
To right leg change ! On both legs—change !
3. (Hands on thighs) Head pressing backward.
4. (Hips firm, astride) trunk bending downwards.
Hips—firm ! trunk forward—bend !
Trunk downward—bend !
Trunk forward—stretch !
Trunk upward—raise !
5. (Hips—firm, astride) Arm swinging.
Hips firm ! left foot sideways—place !
Arm swinging from left arm—begin !
To right change !
With both hands—begin ! stop !
6. Game-like Exercises —
(a) Marching on a beam or a log of wood with knee raising.
(b) Marching with kicking the hand forward.
Slow march ! With the rising foot hand forward—raise !
With foot of same side—kick !
7. Front hand lying arm bending.
To front hand lying position—down !
Arms—bend ! arms—stretch !
8. (Astride,) Trunk bending sideways with opposite heel raising.
To the left—bend ! to the right—bend !
Upward—stretch ! By numbers 1-2-3-4.
9. Agility Exercises.
10. Breathing.
11. Dismissal.

TABLE 13.

Time 15 minutes.

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1. Order Exercises.
2. Astride jump with rebound at each landing.
3. (Hands on thighs) Head pressing backward.
4. (Arm sideways) Trunk bending forward with hand turning.
Arms sideways—raise ! hands turning with trunk forward—bend !
Hands turning with trunk upward—stretch ! repeat by numbers—1-2-3-4.
5. (Hips firm) Leg raising sideways and forward.
6. (Kneeling) Arm swinging.
Kneel—down ! left arm—swing !
To right arm—change ! both arms—begin !
7. Game-like Exercises—
(a) Marching and running with fancy steps.
(b) Wheelbarrow race.
8. Span bending with living support.
9. Trunk bending downward to grasp ankle.
10. Heel raising and knee bending, with arm raising sideways and upwards.
Heel raising and knee bending with arm raising sideways and upwards 1-2-3-4.
11. (Hips firm) Outward lunge.
Hips—firm ! left foot lunge outward—place ! recover !
Right foot lunge outward—place !
12. Agility Exercises.
(a) Jumping and vaulting.
(b) Hand standing.
13. Game e. g. Net ball or volley ball.
14. Breathing.
15. Dismissal.

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TABLE 14.

Time 45 minutes.

1. Order Exercises.
2. Astride jump with knee bending.
3. Neck rest, quick head turning.
Neck—rest ! quick head turning from the left—begin !
By numbers 1-2-3-4.
4. (Astirde) Trunk turning with simultaneous slow arm stretching upward.
Arms upward stretching and trunk to the left—turn !
Trunk forward—turn ! Repeat to the right by numbers.
5. (Hips firm) Leg circling sideways and forward.
6. Double arm punching upward.
For punching, arms—bend !
Double arm punching upward—begin ! stop !
N. B.—Both arms punch together as hard as possible.
7. Game-like Exercises—
 - (a) Marching and running.
 - (b) Tug-of-war with one hand.
8. Span bending.
9. Shoulder stretching.
10. (Hips firm) Quick heel raising and full knee bending.
11. Back lying leg raising and lowering sideways.
On back—down ! both the legs—raise !
Sideways—lower ! (with living support.)
12. Agility Exercises.
 - (a) Somersault.
 - (b) Head standing.
 - (c) Jumping and vaulting.
13. Game.
14. Breathing.
15. Dismissal.

TABLE 15.

Time 45 minutes.

- | | |
|-------------------|---|
| positio | 1. Order Exercises. |
| 2. Q ₂ | 2. Hopping to 4, then turn about with high jump. |
| | 3. (Hands on thighs) Head pressing backward. |
| | 4. Foot forward, trunk bending forward.
Left foot forward and hands under arms! place! |
| | 5. (Head rest) Leg circling forward and sideways. |
| twisti | 6. Arm circling. |
| | N. B.—Slowly at first, rapidly afterwards. |
| again | 7. Game-like Exercises. |
| arm, | (a) Running high jump in files, landing on one foot. |
| the a | (b) Leap-frog. |
| 3. | 8. Front hand lying arm bending and stretching.
Front hand lying—down! arms—bend! stretch!
To left side hands—down!
Repeat with the right. |
| | 9. Knee bending, arm raising sideways. |
| inw. | 10. Lunging backward.
Left toe lunging backward—place! recover! change! |
| 4. | 11. (Astride, head rest) Trunk bending sideways with opposite
heel raising. |
| the | 12. Agility Exercises. |
| | 13. Game. |
| | 14. Breathing. |
| | 15. Dismissal. |

CHAPTER VI.

Remedial Gymnastics.

The object of remedial gymnastics is to cure the deformities which are formed by rigid and continuous desk life or are due to other causes. If, however, the defects are of long standing or are of inherent nature, it may not be always possible to cure them, but if the corrective exercises are taken regularly, they will, at least, prevent the defects from getting worse. In certain cases we have seen that an apparently incurable malformation has been absolutely cured by massage and remedial gymnastics.

The exercises, which we have selected here, are those which are already described under the various group headings in Chapter III of Part I and are performed during the daily lesson according to requirements; but, for particular defects, some special exercises should be chosen and should be occasionally introduced during the daily lesson. In cases where the deformities are great special classes should be held and specific exercises should be performed.

There are various causes for the defects in spinal curvature. Defects in the spine. Some are hereditary; some are due to illness, others are caused by unfavourable desk life. The malformation in the spine will be either in the frontal or in the lateral plane.

The former is chiefly due to the lengthening of the back muscles which make the spine bend forward (backward bending of the spine is rare) causing the deformities. Our schools are mainly responsible for this defect, for very often we find that the

seats are too high for the desk and that the child has to stoop down on his exercise books. In young age when the muscles are elastic and the tendons stretchable, long and continuous use of unsuitable furniture may cause permanent injury to the spine. In certain cases the over-stretching of the back muscles is due to the carrying of heavy weight on the shoullder when the streching position is persistently maintained. The following exercises have distinct corrective effect on such deformities and should be taken in extra-time for about fifteen minutes every day.

1. *Head Pressing Backward.*

Hands on thighs—place ! head backward—press ! upward stretch !—(Three times).

2. *Leg Raisings.*

Leg forward—raise ! lower ! backward—raise ! lower ! by numbers and with different legs. 1-2-3-4. (two times).

3. *Spau Bending.*

(two times).

4. *Trunk Bending Forward and Ankle Grasping.*

Trunk forward—bend ! ankle—grasp ! pull ! pull !

Trunk upward—stretch !

5. *Knee Raisings.*

Left knee—raise ! lower !

6. *Hand Standing.*

7. *An Easy Breathing Exercise.*

The deformity in the lateral plane of the spine is often caused by unfavourable desk life. If the desk is too high for the seat, the child shall have to twist round to keep the book in proper condition and if this position is maintained for a long time permanent injury in the lateral plane of the spine is inflicted. The following table of exercises is intended for such children:—

1. *Hips Firm, Astride Jumping.*

Hips—firm ! Astride jumping—begin ! 1-2-3-4-5-6-7-8.
Class—halt !

2. *Head Rest, Kneeling, Trunk Bending Sideways.*

On knees—down !
Head—rest ! trunk sideways—bend !

3. *Leg Raising Sideways.*

Leg sideways—raise ! lower !
Right leg—raise ! lower !

4. *(Astride Under-bend) Trunk Bending Sideways.*

Foot sideways—place ! arms—bend !
Trunk sideways—bend ! upward—stretch ! etc.

5. *Heel Raising and Knee Half Bending.*

Arms—bend ! sideways—stretch !
Heels—raise ! knees half—bend ! stretch !
Heels—lower ! hands—down !

6. *Cartwheeling.*

7. *Easy Breathing Exercise.*

N.B.—In giving these lateral exercises, the teacher should adjust himself to the circumstances; as, for instance, if the child has his spine bent to the left, the teacher should give him many more trunk bending to the right than to the left.

Sometimes, the deformity in the spinal curvature is due to the inequality of the two legs; as, for example, if the left leg is smaller than the right one, the spine will be bent to the left. The teacher should first remove the causes of the defects (by prescribing a high heeled shoe to the left foot in this particular case) and then give remedial form of exercises.

Massage is of very great value in the treatment of such defects.

The school is chiefly responsible for these defects for when the slouching position is maintained during desk-work for a long time breathing is restricted and the capacity of the chest diminishes. The consequences are deplorable and permanent injury is very often done on account of the carelessness of the parents and the school masters who do not warn their young folks against this great danger. No doubt, prevention is better than cure and that right posture should be insisted on both in school and at home; but, when the deformities are once formed, the following exercises should be taken for about 20 minutes every day after school work.

1. *Astride Jumping, Hand Swinging Sideways.*

2. *Head Pressing Backward.*

3. *Arm Across Bending and Flinging.*

Arms across—bend 1 sideways—fling 1
(six times).

4. *Knee Raising.*

5. *Astride, Arm Swinging.*

Foot sideways—place 1

Hips—firm 1

Left arm—swing 1

To right arm—change ! swing !
To both arms—change ! swing !

6. *Arm Circling.*

First with one arm; then with both.

7. *Marching like a Prince.*

8. *Arm Raising from Forward to Sideways with Deep Breathing.*

This deformity is generally natural, but is sometimes caused by the misuse of foot in very young age. This defect is, however, curable and the following exercises are found good correctives for *flat foot*.

1. Hopping on the spot.
2. Astride jumping with two intermediate hops.
3. Heels raising and lowering.
4. Quick march.
5. Marching with heel raising.
6. Heel raising and full knee bending.
7. Marching sideways with heel raising.

Corpulence is very common among those who take rich food and donot take adequate physical exercise to make use of fatty substances that begin to accumulate all over the body, specially on the lower abdomen. It is difficult to prescribe one set of physical exercises for they will depend on the amount of fatness in the body.

While studying physical education in Denmark we met two patients lying in the hospital at Copenhagen in 1926 and were very much shocked to see their pitiable condition. Both of them were fat ladies of about twenty five years old. They were asked to put their feet under a big shelf then to lay themselves on the floor and sit and lie several times so as to strain their abdominal

muscles. In order to get rid of her fatness in a short time one of them strained her muscles so severely that the abdominal veins were stangulated and ruptured and she entered to the hospital in a critical condition.

The other case was very different. Another did 'lying' and 'sitting' so violently that she upset the whole shelf which fell upon her, thus injuring her whole body. She was also brought to the hospital in no better state than her unlucky comrade.

These extreme cases were taken to show to our readers that more harm than good will accrue if the corrective exercises are taken without proper guidance from an expert. The exercises should be prescribed for individual patients and, therefore, no set of exercises can be mentioned for general use, but sedentary habits must be discouraged and diet must be regulated. We, however, suggest the following exercises: —

1. Quick marching and running.
2. Trunk bending downward.
3. Back lying leg raising.
4. Heel raising and full knee bending.
5. Front lying and arm bending.
6. Jumping and vaulting.
7. Marching.
8. Breathing.

While summing up the whole matter it may be pointed out that the corrective exercises, we have discussed here, must be prescribed individually by an expert of remedial gymnastics. The exercises should, however, be followed by proper massage, * which should take double the time given to the exercises.

* See the Chapter on Massage in the author's book on "Open Air Schools."

PART II.

PLAYFUL ACTIVITIES

Chapter I.—THE PSYCHOLOGY OF PLAY.

" II.—GAMES.

" III.—ATHLETICS.

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PART II.

CHAPTER I.

The Psychology of Play.

Play is often described as one of the most fundamental tendencies which are common both to man and animal. Children and the young of many species of animals take to play spontaneously without any teaching or example. Several theories of play have been put forward, but the oldest of the modern theories was proposed by the poet Schiller and was developed by Herbert Spencer. According to this theory, play is compared with a locomotive engine with a surplus of nervous energy. The young creature being tended and fed by its parents does not spend its energies upon the quest of food and has, therefore, surplus store of energy which overflows along the most open nervous channels producing purposeless movements of the kind that are most frequent in real life. There is no doubt an element of truth in this theory, but it does not sufficiently account for the facts even in the case of simple play of animals, still less does it consider all the forms which the human play activities take. Play often continues when surplus energy is no longer present; as, for example, take the case of a weary child who likes to play a game immediately after strenuous school work of five hours. The element of truth is that the creature is most disposed to play when it is well nourished, but this is also true for work.

Professor Stanley Hall regards children's play as special instance of the operation of recapitulation. He holds that the life of every individual exhibits the of the race. Thus the acting of the children are very

Hall's theory
of play.

similar to some of the primitive tribes living in some unexplored regions of the globe.

"That is why" says Stanley Hall, "the heart of youth goes out into play as if in it man remembered a lost paradise. This is why, unlike gymnastics, play has as much soul as body, and also why it so makes for unity of body and soul that the proverb 'man is whole when he plays' suggests that the purest plays are those that enlist both alike". The educational value of this theory is that some of our primitive types of movements, e. g., running, leaping, should be encouraged, as they will give us greater control over our body and mind which we have inherited from our ancestors.

Professor Karl Groos has recently tried to explain the play phenomena from the biological standpoint of view.

Groos's theory of play. He considers play to be a serious business of life. Consider the case of a kitten playing with a ball on the floor. It is clear that in the course of such playing the kitten improves its skill in movements of the kind that will be needed for the catching of its prey when it is thrown upon its own resources.

Groos, therefore, reverses the Schiller-Spencer dictum and says it is not that young animals play because they are young and have surplus nervous energy. We must believe rather that higher animals have this period of youthful immaturity in order that they may play. Their youthful play tendencies are, according to this view, special racial endowments of higher biological utility. Professor E. H. Bradley supports Karl Groos by explaining that the playful bitings of young dogs manifests a certain degree of self restraint as the psychological characteristic of play; but, certainly, he in this case, over-estimates the mental process of the puppy. It is obvious that Groos's theory is applicable to some of the plays of children, especially the warlike and hunting games of boys and the doll playing of girls, but there are other forms of childish play which cannot be all accounted for in this way and which are not the direct expression

of instincts. Play is also continued into adult life, and its functioning in adult life can hardly be to prepare for future activities. Nevertheless, its educational value is great for it was the first time we began to regard play as a serious business in life. On this basis we suggest that play should form a part and parcel of School Education and that no institution should exist which does not make a provision for small games and sports.

The motives of play are various, often very complex and cannot entirely be covered by the *anticipatory theory* of Professor Karl Groos or *reminiscent theory* of Professor Stanley Hall. Besides, the class of play already mentioned, there are several classes of play motives—as are the desire of rivalry and the pleasure of *make believe*. The first motive plays an important part, not only in games, but in many of the most serious activities of life. The impulse of rivalry is to get the better of an opponent in some sort of struggle, but it differs from combative impulse in that it does not prompt to and does not find satisfaction in the destruction of the opponent. The impulse of rivalry is very strong in the people of Europe and this accounts for the rapid progress they have made in education, trade, and industry. Till the age of five or six a mere running about and shouting follows Schiller-Spencer's surplus energy theory, but afterwards the impulse of rivalry begins to dominate the child's mind and no time should be lost in ennobling this impulse to the carrying out of the higher ideals of life. Every school should, therefore, organize competitive games, like Hockey or Kabbaddi and athletic sports like Broad Jump or Hurdle Race.

The theory of *make believe*, though of comparatively recent origin, has an important place in education. It was Froebel who first believed that play has had great educational value and encouraged the child to make believe, because he could not play without doing so. But it does not mean that the child always likes to make fanciful images : it is

as Professor Nunn very rightly remarks that a child's make-believe is a mere biological device to enable the child to gradually master what he can not do at once on account of his limited stock of knowledge. *As experience brings greater intimacy of the surroundings, the making-believe element becomes less and less conspicuous; and this is precisely what happened in the case of a child who was destined to be a great educator of his time. At the age of seven when he was first photographed, he wanted to be a photographer himself. He took a cardboard box, a lens from his father's spectacles and a glass sheet from his window. He covered the whole thing with his black shawl and had his play articles focussed on the pane. The only chemical fluid he could lay hands on was vinegar and he could discover no reason why it should not do. So in a dark room he scrupulously washed his "plate" and believed to have seen the faint but unmistakable lines of his picture on the surface of his "negative". The same child, when he grew up, assured us that his keen desire for becoming a photographer created in him an appetite for his scientific pursuits.

We have made use of this psychological fact in suggesting some imaginative movements, e. g., Windmill or punching Balloons in gymnastics for small children and simple games like "Are you at home, Mr. Bear".

The recreative value of play was long ago discussed by Lazarus, but its true significance on intellectual, social, and moral sides is of comparatively recent origin and much can be done by utilising this play instinct more effectively as an aid to the education of childhood. At every stage of education proper allowance must be made to what Rousseau rightly observed "the noble art of losing time". When one part of the brain centre is fatigued, play must be made use of, in calling into action, other areas of the brain. This will give time to the tired part of the brain to energise the tired cells. The educator should also remember that play is an instinctive

* T. P. Funn: "Education, Its Data and First Principles."

(139)

impulse and should be allowed to a large extent to take care of itself. Only then play will give scope to the individuality of the child and develop his sense of freedom and power. The children should not, however, be left entirely to themselves or the brutal side will gradually tend to degenerate into rough and teasing habits. Only the proper supervision can, as Montaigne had long ago said, train the muscles and brace the mind.

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CHAPTER II.

Games.

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Formal exercises are, no doubt, necessary for ensuring an all-round development and to counteract against the evil effects of desk life, but there must be activities based on the natural desires of the child and these are walking, running, leaping, climbing, throwing, and fighting. These activities require not much organization and are very suitable for young children. For older pupils they should be more organized to give them training in obedience, co-operation, and self reliance.

We therefore classify games as follows :—

The games which we put under this category are usually those that do not usually require high degree of specialization or any special play ground and therefore every scholar, whatever his natural aptitude for outdoor exercises, is, can take part in them. These games require lot of skill and have as much educative influence on the scholars as those which we regard as highly organized games. Some of them are very good for social point of view, for persons, of different sex, of various age and vitality, can play together and enjoy them. Most of them can be chosen as agility exercises in the Physical Training lesson. Only a few of these games are here described.

Games suitable for children approximately 6 to 9 years old.

A — RELAY RACE GAMES.

The players are divided into groups with their captain in front and line up in a single file in separate lines, each with a football. At a signal each leader passes the ball backward overhead, the next player catches it and passes it in the same way and so on to the end of his line. When the last player receives the ball he runs forward, stands in front of his line and passes the ball over head as before. This continues till the captain comes in front of his line again. The team whose captain comes first in front of his line is the winner.

Arch Ball Relay.

According to the size the class may be divided into any number of teams. The players stand in stride standing position with a leader in front holding a ball. At a given signal the leaders of each team pass the ball rolling down between the legs of the player helping the ball along. When the last player in a team receives the ball he runs with it to the top of his team and re-starts the ball down the line. The game continues until each team has regained its original order.

Tunnel Ball Relay.

The class is divided into a number of teams consisting of 8 or 9 players in each. The children stand in files as shown in the diagram. The teacher calls a number, say 5. Immediately the 5s in each file run in the track, the teacher awards one mark to the team whose player has come back to his position first. The teacher next time calls another number, say 1. Now 1s of each team run and complete the race. The team which gains most points wins the game.

Running Numbers

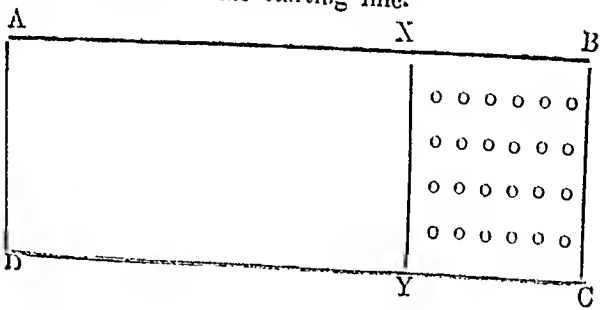
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8

N. B.—If conditions allow, the children can sit to play the game. Players may run zig-zag instead of straight round the files.

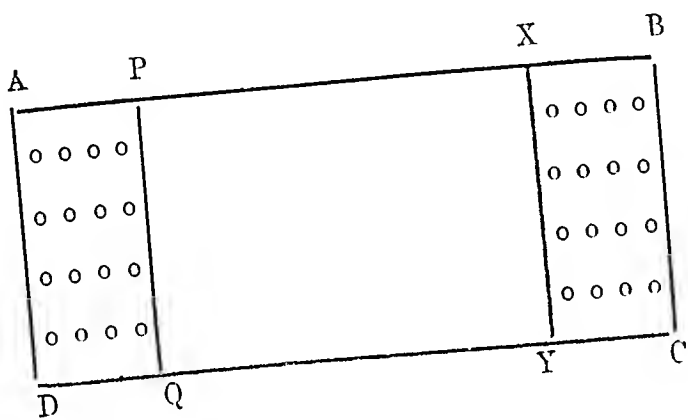
The class is divided into a number of teams according to the number of players. The players of each team stand two steps apart.

At the feet of the leader in each team some 8 or 10 bean bags are placed. At a given signal the bags are passed quickly down from one player to the other. The last player, as he receives each bag, makes a pile of them at his feet. The bags must be carefully placed so as not to fall over. The team, finishing the passing first, is the winner.

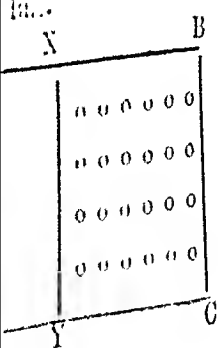
(a) A. B. C. D. is a rectangular plot of ground suitable for the children. The players are divided into a number of groups which take their places in file behind a starting line marked out at one end of the playground. The line XY shows the position of the first runners. AD is either a wall or a broad white line visible at a distance. At a given signal the first runner of each team sets off to the other end AD of the playground, and having arrived there turns back to the starting point. Here the second runners are ready and as soon as their friends cross the XY they in turn run to AD, returning to set free the third members of the team and so on. The winning team is the one whose last player is first back across the starting line.



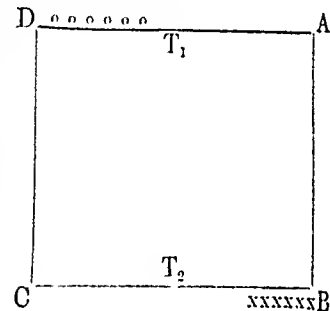
(b) If larger space is available, double relays of the following type is more suitable to the class. It is similar to the Single Relay Race except that the teams are divided into two halves, each of which stands behind the starting line at either end of the playground.



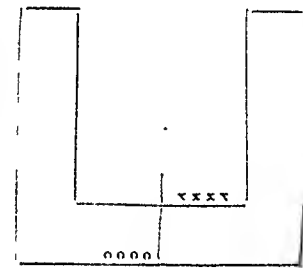
Each player runs the course only once. A token may be given to each team. This is held in the first place by the first runner of each team, who at the signal sets off towards the other half of his team waiting at the distant end of the playground. On arriving he gives the token to the hand of the first runner at that end and falls out. The token is meanwhile borne back to the original starting point, where it is delivered to a team fellow at that end and so on. The winning team is the one whose last runner reaches the other extreme of the course first.



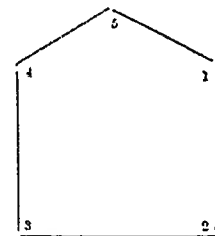
(a) The teams are arranged behind the starting line T_1 and T_2 . At a signal the first runners set off complete the course, stand behind the last runners, and pass off the tokens through their friends to the second runners who in turn set off and so on. That team wins which completes the round first.



(b) This is of the same type except that the course is curved. The turning points and the path should be carefully arranged so that the runner cannot turn short or is easily detected by the umpire if he does so.

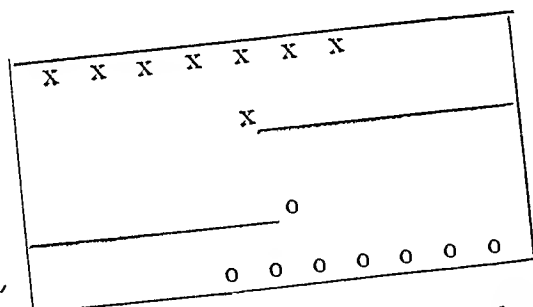


(c) If larger space is available, the race may be run over the pentagonal course as shown in Fig. The runners may run in the same direction or the opposite, but should carry a token which they must hand over to their friends standing at 1. The runners from (1) set off as soon as they get the token and hand them over to their friend at (2) and stay there. The runners from (2) start off similarly with token and so on. The players requiring no running stand at (5).



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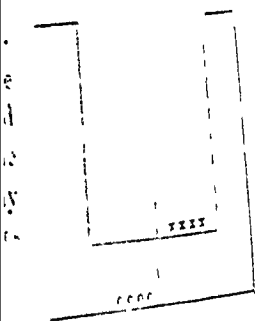


The figure shows the arrangement of the class, each boy standing about 10 yards apart and facing inward.

Parallel Relay Race.

The first runners stand after finishing the course at the position of the last runners and should pass off a handkerchief to the next-runners through their own sides.

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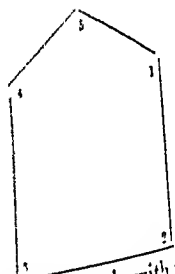
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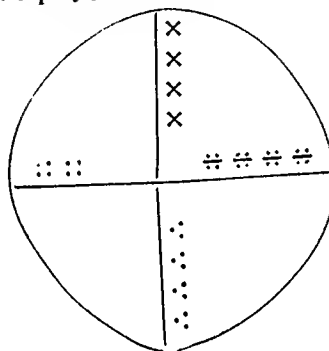
om (2) start off similarly with taking no running stand at (5).



A large circle is marked out in the playground. The class

Circle Relay Race

is arranged as shown in the Fig. Each player runs round the circle in clockwise direction, returns to his place and then runs to the centre of the circle. If he reaches the centre first he counts one point to his side. The next four players now run and the winner counts a point to his side, and so on. The group which has scored the largest number of points is the winner.



Club Team Race

Across one end of the playground as many small circles are drawn as there are teams and one Indian Club is placed at its centre. Each group is given one club. The first runners carry one club each, change it with the club in the circle of their own side and run back and hand over the club to their friends who in turn do the same. The winner is of course the one which finishes the work first.

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B.—TAG GAMES.

The whole class consisting of between 24 to 36 children can join it at the same time. The children are arranged in lines all facing the same direction as in a gymnasium class.

x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x

The distance between the players should be such as to admit of their joining hands easily. This they do forming lanes between the lines of players. One player is runner and another the catcher. The runner tries to evade the pursuer by running up and down the lanes. The teacher call out "turn to the left face" at any time. On command all the players in the line face to the left and join hands in this new direction. Thus new lanes are formed and the catcher is suddenly *cut off* from the one whom he was pursuing. Again the command is given "to the right face" and the players act accordingly. This game furnishes sudden surprises to the runner and catcher. When one is caught both players should go to the lines, others taking their places as runner and catcher.

This game is best played in the moonlight in summer or in sunshine in winter. The one who is "thief" tries to step on or otherwise touch the shadow of any of the players, various ruses are adopted by the players to save their shadows from the ruthless footstep of the "thief". A player may bend, lie down or roll over to shorten his shadow, but if his shadow is touched he becomes the "thief." This is a very pleasing game for small children.

N. B.—"Thief" is the literal translation of the word used on such occasions in Indian Tag Games.

—TAG GAMES.

ting of between 24 to 30 min-
same time. The children are
facing the same direction

x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x

on the players should be such as
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The teacher calls out "thief"
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hands in this new direction. If
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Again the command is given "thief"
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e lines, others taking their places

The players arrange themselves in a circle, standing in couples, facing the centre, each standing directly behind the companion. There must be one player who is the runner and the other "thief". The runner tries to escape from the "thief" by dodging through or around the circle and may save himself from capture by taking his position in front of any of the couples. As soon as he takes this position the players are "three deep" and the third man must run as he is now the object of the pursuit of the "thief". The third or rear boy is in danger of being tagged until he in turn can save himself by taking his place quickly in front of one of the couples. When one is tagged he immediately becomes the "thief" and endeavours to tag the one who was formerly the "thief". The changes should be quick and the players should not endeavour to run long at a time. The third man must get in front of one of the couples as quickly as possible.

Variations.

- (1) At the blow of a whistle, the runner immediately becomes the "thief" and vice-versa; and the game continues as before.
- (2) The two players who form a couple may face each other. The runner now gets between the couple

and the one to whom his back is turned becomes third man and must run to escape the thief.

One player is made a *devil*. The *devil* attacks a player who may seek immunity from being tagged by touching a piece of wood or iron. No growing thing, however, such as a tree or shrub, is to be considered as wood. No player may stay very long in any place of safety and the moment his hand or foot is taken from the wood he is liable to be tagged.

This game affords opportunity for a great deal of sport through the making of false starts and the daring approach to the one who is the *devil* who in turn may make sudden and unexpected sorties in different directions.

N. B.—This is a very ancient game and has evidently come from an old superstition that to touch iron or some other particular substance gives immunity from the spell of evil spirits.

A circle is marked on the ground and the players stand outside of it facing inwards, with about one step between each player. One player the "thief" goes inside the circle. Other players step into the circle to give the thief a chance of touching them. If a player is touched when he is inside the circle he becomes the thief and the thief joins the other players outside the circle. With a large number of players there may be two or three thieves and the marking of the ground may not be circular.

One player is chosen to be a "thief". At a given signal all the players disperse and the "thief" tries to catch as many as possible. Those who are caught join hands with the "thief" and the game continues until all are caught. Only the two end players can catch anyone with their free hands.

Some ten or twelve players stand in a circle. One player called the "thief," stands at the centre of the circle.

Ball Tag. A ball is supplied to one of the players and is thrown from one player to another across the circle. The thief tries to touch the ball or the player who holds the ball. If he succeeds the one, who is touched or who last threw the ball, becomes the "thief". If the ball goes outside the circle the one who missed the ball or the one who threw the ball 'wide' becomes the "thief." If the class is large it can be divided into small groups.

The class is divided into two teams facing each other. A large dice is taken and each group is marked on two of its faces. The teacher rolls the dice between the two teams. The team whose name is turned up runs away to a safety place which is at some distance from the teams. The other team attempts to tag the runners before they reach the safety zone. Players tagged drop out of the game. Players re-form and the dice is thrown again. The team which eliminates the other wins.

C.—OTHER GAMES.

All the players except two are arranged in a rank and are called the "sheep". One player called the mother stands at the opposite end of the playground, and another player, the wolf, stands at the other side.

At a given signal or call the sheep run across the playground to the mother, and the wolf rushes out and catches as many as possible. The mother then changes ends and the game continues till all are caught.

The class is arranged in two or four ranks. All children face the front and stand about two steps apart.

Catch Partners

At a given signal the children disperse and each

child in a rank tries to catch his partner. After a few seconds the whistle is again sounded and the players return to their places in four or two ranks joining hands if they have "tagged" their partners. The next time those who ran away get their turn.

This game is played when the sun is shining. One of the players is the moon and takes her place in a large area of shadow such as would be cast by a large tree. As the moon belongs to the night she shall not go out in the sunshine. The other players are morning stars and as they belong to the daylight, their place is in the sun. The stars dance around in the sunlight venturing occasionally into the shadow. The moon tries to catch the stars while they are in the shadow. Any star so caught changes places with the moon. If there are more than 10 children and a few trees or houses, a number of moons can be selected. The stars get into the realm of any of the moons.

N. B.—This is a Spanish game and can be played in India when the sun is pleasant.

The ground is divided into two equal parts, with a small goal marked off at the rear of each part in which equal number of sticks, say 6 or 8, are placed. Each player who reaches the enemy's goal safely may carry one stick back to his own goal and may not be caught while carrying it back. If caught in the enemy's territory before reaching the goal, a player must remain a prisoner in the goal until touched by one of his own side. Neither may be caught while returning. Any player may catch any opponent while in his territory and while going to

Sticks	
A Side	
B Side	

fetch a stick or returning with a stick. No stick may be taken by a side while any of its men are prisoners. The game is won by the side gaining the largest number of sticks.

A large circle is marked on the playground or floor. One **Puss in the Circle.** player is chosen a Puss and stands near the centre of the circle; the other players stand outside of the circle surrounding it. These players may be tagged by Puss whenever they have a foot inside the circle. They will tense the Puss by stepping in and out of the circle. Any one, whom Puss touches, changes places with the Puss. If there are large numbers of players, there may be two or three Pusses and the circle should be correspondingly large.

All the players but one sit in a circle. The odd players **Drop the Handkerchief** runs around on the outside of the circle, carrying a handkerchief which he drops behind one of the circle players. The main idea of the game is to take the circle players unaware. Those who form the ring must look towards the centre and are not allowed to turn their heads as the runner passes them. The one who runs around with the handkerchief will resort to various devices for mis-leading the others as to where he drops it. The players can feel with their hands if the handkerchief is dropped behind them and as soon as a player discovers that the handkerchief has been dropped behind him he must pick it up: and should he fail to do so, and if the player who dropped it returns, he can take it up and beat the player behind whom it has been dropped, till he gets up and takes the handkerchief from the hands of the runner. The new runner does the same trick, but if the player behind whom the handkerchief is dropped picks it up quickly, he can chase the player who dropped it and beat him till he sits down in his place.

The class is divided up into threes of which two make a **Hound and Rabbit** small ring round the third. The ones *inside* the ring are the rabbits (in holes).

Two odd players form a dog and a rabbit. At signal the dog chases the odd rabbit who can take refuge in any hole ; but when he goes in the other rabbit must run out. The dog then chases this one. If the dog catches the rabbit then he runs away and the caught rabbit chases him.

The changes should be made quickly to keep the children actively engaged.

After a few minutes another of the three will be the rabbit in the hole and next time the third one will go inside, so that all children have a turn in the running.

A circle from 12 to 20 feet in diameter is drawn on the Sun Dial ground. This is intersected with straight lines like the spokes of a wheel which divide it into 12 sections numbered consecutively from one to twelve.

If there is enough space for a large circle a number of players are blind-folded, placed near the centre and turned around several times to confuse their sense of direction. They then walk around inside the rim while counting 12. They stop on their last count and the number of the space in which they stand is scored to their respective credit; for instance, if a player stops in 8 section it scores eight points for him. Should a player stop with one foot on a line or outside the circle, he scores nothing. The players take turns, each having but one trial at a turn. The game is won by the player first scoring 50 or 30 points as has been decided beforehand.

All of the players but one are dispersed in the corners or at convenient goals that will answer the same purpose. The odd player goes round. Any two of the other players meanwhile watch their opportunity to beckon to one another

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Puss in a
Corner.

for exchanging places. They try to make this exchange of signals and to dash across from place to place when the attention of Puss is attracted to some other direction. The Puss must try to secure a corner by rushing to any place that is vacant when the players thus exchange.

The sport of the game consists very largely in tantalising Puss by making many exchanges; or, on the other hand, in Puss's suddenly dashing for some vacant place without giving previous evidence of knowing it. Whenever Puss secures a corner, the odd player left out becomes Puss.

Puss, when not succeeding in getting a corner as soon as desirable, may go a little far off the corners and may call "all change" when all the players must exchange places and in the general *flurry* Puss should secure a place.

If space permits, this game may very delightfully be played in an open country place, each player taking a tree as a corner when the dodging and running may be much more varied and interesting than in a small space in front of a school building.

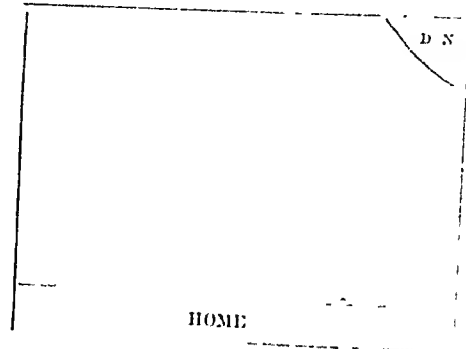
A number of stools or small packing cases are placed in a circle with considerable space, between them, there being one stool less than the number of players. If played in a country field a stone may be used to sit on in place of a stool. The teacher or the play leader plays on some musical instrument and the players run in a circle outside the boxes. As soon as the music stops the players must immediately find their seats, the one who does not find the seat gets one minus mark. The game may be started all taking part in it again; the one who secures the smallest number of marks is the champion.

N. B.—This is a modification of the well-known Scotch game, "Fire on the mountain" and a few other European games of the same type, the main distinction being that all the players are engaged all the time in the game.

1. In the corners or at the same purpose, Any two of the other may be chosen to one another

A "den" is drawn across one corner of the yard and a
"home" is made at the other side.

Are you at
home, Mr.
Bear.



Mr. Bear is in the den and the children are in the home. At the signal they creep towards the den asking all together. "Are you at home, Mr. Bear"? Mr. Bear will reply "No", so then the children walk nearer and ask again "Are you at home, Mr. Bear?" Mr. Bear may answer "No" a few times. When he says "Yes" he jumps out and catches as many children as he can as they run back to their home.

Those caught help the Bear next time.

Games Suitable for Children aged 10 years and upwards.

A.—RELAY RACE GAMES.

**Tunnel & Arch
Ball Relay**

This is a combination of the two games we have described before.

The ball passes down the line, first overhead, as in Arch Ball Relay, then between the legs, as in Tunnel Ball Relay.

**Dribble Ball
Relay.**

The class stands in file formation.

A circle of 1 yard diameter is drawn about 10 to 15 yards from the starting line. The leader runs forward on a given signal, fetches the ball from the circle and places it on the starting line. He then dribbles the ball forward, leaves it in the circle, runs back, and touches the hand of the second player now standing on starting line. Each player in turn runs to the circle, carries the ball back, dribbles it to the circle, runs back and touches the hand of the next player, passing to the end of the file. The winning team is the one whose players finish the game first.

The class is divided into a number of teams each being provided with a stick about three to four feet long. On the signal **Jump the Stick Relay.** held by the first player of each team. No. 1 of each team runs to the fixed distance and back again. Meanwhile No. 2 is ready to catch the stick at its other end. Thus holding the stick between them and near the ground they run to the rear of their team. The players in the team jump over the stick as it reaches their feet. When the whole team has jumped the stick No. 2 takes the stick and runs to the fixed distance and back again, immediately handing the other end of the stick to No. 3 and the game continues, as described above, until the last man in the team carries the stick across the fixed line.

A starting line is drawn on the ground behind which the **Hopping Relay.** players stand in two or more single files facing a goal. The goal may consist of a wall or a line drawn on the ground and should be at a distance of 15 to 20 feet. At a signal the first player in each line hops on one foot to the goal, touches it with his hands or stoops for it if it be a line on the ground and hops back to the end of his line, which should have moved forward to fill his place as he started. He takes his place at the rear end of the line. He touches the first player of his team as he passes him and this player at once hops forward to the goal. Each player thus takes his turn, the team

winning whose last player first reaches the rear of his line and there raises his hand as a signal.

Square Relay
(A Finish Game)

The game can be played by any number of players divided into four equal teams,

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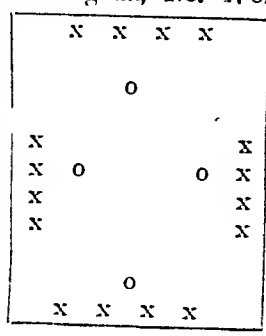
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The teams are arranged as shown in the diagram, No. 1. of each facing the centre, all the others facing outward. A bean bag or any other suitable object is placed in a circle in front of each team. The circle should be about one foot in diameter and the distance from the team concerned the same in every case. On the word "go" each No. 1, runs to the circle, picks up the bean bag and runs all round the four teams as shown in the diagram, and gives the bag to No. 2 in the team. No. 2 then runs all round the four teams and hands the bag to No. 3. This goes on until the last members of the teams have run round. They then place the bag in the team circle.



N. B.—Various modifications in this game is possible, e.g., the game may be played twice the last boy after running round once gives the bag to No. 1, and the game continues as before.

The class is divided into a number of teams, each standing up in single file behind a starting time. Directly in front of each team, at the opposing end of the running space is a row of a number of Indian clubs about two feet apart.

On a signal, No. 1 of each team runs forward and zigzags between the clubs, without knocking any one—afterwards he makes a straight run back to his team touching No. 2's hand and

the rear of his line
by any number
equal teams,

then passes to the rear end of his line. No. 2 repeats the run of No. 1 and so on, until every one has run. If a club is knocked over, it must be set up immediately by the one who knocked it over,

Each team consisting of 8 or 10 players is divided into two equal parts and arranged as shown in the diagram. On the signal being given, No. 2 runs to touch the hand of No. 1 and takes the place occupied by him. No. 1 runs to No. 4 and so on, until both sections have changed places.

Postman Relay.

n in the diagram, No. 1

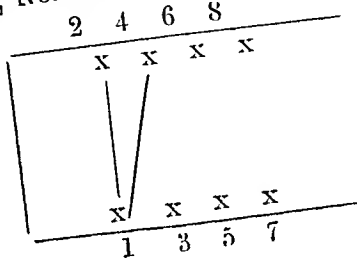
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x	x	x	x

The class stands in file formation.

Wheelbarrow Relay.

A chalk mark is made where the leader stands and another chalk mark about 10 yards distant. The leader places himself on his hands and feet. His comrade No. 2 standing next to him grasps and raises the feet of his leader. They move forward in this way until No. 2 passes the line. The leader stays there while No. 2 runs back to the starting line and gets down on his hands and feet. No. 3 takes him on No. 2 stays and No. 3 returns and so on until all reach their destination.



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he last boy after running round
o. 1, and the game continues

The last player is now brought back by the leader No. 1 who runs back to be wheeled by his next comrade and so on until all are back in their original places.

number of teams, each standing
and a starting time. Directly
, at the opposing end of the
r of Indian clubs about two

The class is divided into a number of teams. The first runner of each team stands opposite to his team at a suitable distance. At the signal he runs to his

team, places one of his friends No. 2 on his back and runs with him to the line from which he started. On reaching there No. 2 runs back, picks up No. 3 and then runs back to the line and so on, until all have run. The last boy carried runs back to the starting line.

him runs forward and zigzags
cking any one afterwards he
an touching No. 2's hand and

B.—BALL GAMES.

The players are divided into two even groups. One group forms a circle and the other group stands within the circle scattered promiscuously. The object of the game is for the circle men to hit the centre men with a basket ball, the centre men dodging to evade this. They may jump, stoop, or resort to any means of dodging except leaving the ring. Any player hit on any part of his person at once leaves the game.

When all are hit the time may be seen and then the players change places and the game is started as before.

N. B.—Slight variations in the game is sometimes desirable; as, for instance, all the players may be centremen and the teacher or play leader takes the ball and hits them; the one who is hit becomes the circle man, thus each player hit by the ball goes to add one to the circlemen. The game continues until all the players are hit. The last player is the champion.

Progressive Dodge Ball The game can be played by any number of players with an association or rugby football.

The ground is divided into three courts 50 ft by 30 ft. If the space is short the two end courts should be made narrower.

The class is divided into three equal teams.

At the opening of the game, the teams of the outer courts stand on the inner lines facing the centre court whilst the players in the centre court disperse irregularly near the middle.

Each team changes its court at the end of some fixed time so that when the game is ended each team has occupied the centre court or each of the three courts in turn.

The object of the game is to hit the players with a flying ball. The team in the centre court opposes the two teams of the outer courts.

Various modifications as regards scoring are possible in this game and may be summarised as follows: —

1. If the ball hits a player by his opposing team, the opposing team gets a point. These points are counted in the end.
2. If a player is hit by his opposing team, he is *out* and shall leave the court; in the end the players of the opposing teams are counted and the score is recorded.
3. A player may be allowed to catch the ball thrown by his opposing team, but if he fails to catch the ball and the ball touches him, he is *out*, or a point is awarded to his opposing team.
4. The players in the centre court may remain entirely in the defensive and at the end of the time the scoring is made.

Whatever may be the modifications the game must be started by a player in the centre court.

A player of any court may run to the inner lines of his court before throwing at an opponent. The players in the outer courts, as soon as the signal to the start is given, may scatter about their respective courts. The game is continued by those in the outer courts combining to hit the players in the centre court.

A player is not *hit* if the ball rebounds from the floor or if the thrower steps over the lines of his own court.

Team Passing The players are divided into two equal teams, each player marking one of the opposing team.

The referee bounces the ball (football) on the ground between two opponents. The player who gets the ball passes it from the spot to one of his own and so on.

The referee should tell the teams before the play begins how many consecutive passes will gain a point.

The referee should call out the number of passes as they are made announcing the total in each time.

Players may not hold the ball for more than three seconds and should not crowd together, but scatter over all the ground available

For any infringement of the rules, a player from the opposite team has a throw from the centre line to his catchers.

N. B.—Instead of a football a bean bag or a tennis ball may be used.

This is another game ball requiring not much activity and is very suitable in hot weather. A small football or tennis ball is the only apparatus required.

A ground is marked out 18 to 26 yards long and of a breadth proportionate to the size of the teams. The diagram shows the arrangement of the playground.

0	x	0	0	x
0	x			x
0				x
0	x			x
0		0	0	x

The game is started by the referee throwing the ball from the side line so that it bounces in the centre. The thrower catches the ball, either passes it to his side player or throws full pitch to his catcher. A point is scored when the ball is caught full pitch by a catcher standing wholly inside the end space.

A thrower may not bounce the ball and must throw it from the spot where he secured it. The opposite throwers try to intercept the pass to the catchers or the pass from the catcher, who has scored a point.

When a ball goes out of the court a thrower of the opposite side recovers it and standing at the place of crossing throws it to one of his own throwers. For any infringement of the rules a player from the opposite team has a throw from the centre line to his catchers.

The players stand in stride standing position making a Stride Ball, circle. An odd player in the centre is given a football. He tries to throw the ball outside the circle through the legs of the players. The players forming the circle try to stop the ball with their hands. If the centre player succeeds in sending the ball outside he changes places with the player between whose or on whose left side it went out. No player in the circle may move his feet to stop the ball.

This game may be played on the same general lines as football, but the players must stand on one leg only. *Hopping Football. and kick with that leg only. They can, however, change feet as often as they like, but must have only one foot on the ground when taking part in the game. Only the goal-keeper can use his hands.

The whole class may play at the same time on a ground about 60 by 35 feet and a fairly large goal should be used.

The play leader should encourage cross and zig-zag passing.

* Author's invention.

The players are divided into two equal parties of 6 to 12 players each side. A football is placed in the centre of the play ground of about 40 feet by 25 feet and is kicked by the side which has not the choice of sides. A modified form of the football rules may be insisted on, but no player is allowed to stand. They can run on four- and kick : they can also lie down and kick.

It is a game which is very useful for children of hot countries as it requires not much exertion.

The class is divided into two teams, the number of players varying with the space at the disposal.

The rules for the game may be the same as those of football except that the ball is hit by the hand and the playground is much smaller.

If the playground is small the teacher may tell the players to use only one hand and not to hit the ball in the air : the ball should always be rolling on the ground.

In India where the ground is sometimes very dusty, the ball may be hit when it is in the air, but not when it is over two feet from the ground. Both the hands may be used for hitting or stopping, but legs must not be allowed even for stopping the ball.

Apparatus:—One association football and two towers. The towers may be either small Indian clubs or something similar.

The ground:—The game can be played in the school playground with an ordinary length and breadth. The two towers are placed each at one end of the pitch and in the centre of a circle of about 2 yards radius.

* Author's invention.

*Description:—*The players are divided into two teams according to the space available and the size of the class. The object of the game is to throw the ball at the tower so that the latter is knocked down.

The game is started by the referee bouncing the ball between two opposing players. The player who gets the ball passes it to one of his own side, who passes it on until one has a chance of shooting at the tower.

Rules:—

1. No player, except the tower-keeper, is allowed to step into the lower circle.
2. Players may not hold the ball for more than 3 seconds.
3. If two hold the ball at the same time the referee shall bounce the ball between them.
4. Players may not take a complete step with the ball in hand.
5. Players, except the tower-keeper, may not beat the ball with the hands.
6. The player, throwing the ball so that the tower is knocked over, scores a point.
7. All roughness shall be penalised by giving the ball to an opponent.

The game can be played on any rough ground about the size of a football pitch with an association or rugby football.

The class consisting of any number of players is divided into two equal teams. The players of each team arrange themselves similar to a hockey or football team.

The winner of the toss throws the ball without moving forward towards the opponents' goal line. Afterwards, each team in turn throws the ball.

If, when the ball is thrown, a player of the opposing team catches the ball before it falls on the ground, he can take three running steps before he throws the ball. If the ball is not caught before it touches the ground, it must be thrown from the place where it is picked up.

The object of the game is to sling the ball over the goal line of the opposing team and a goal is scored when the ball passes over the opponents' goal line except it be caught before it touches the ground.

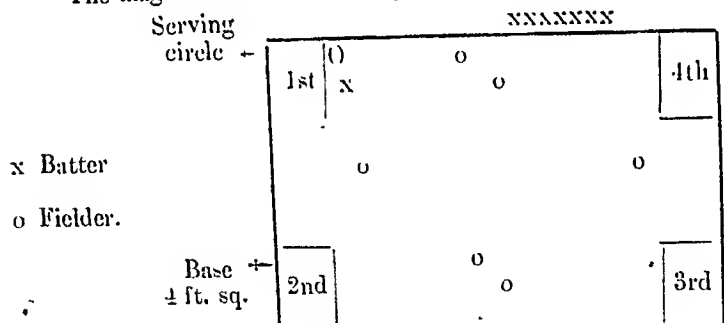
If side lines are arranged and the ball passes over one of these, it is brought back by an opponent to the point where it passed over and is thrown from there.

When a goal is scored the losing team re-starts the game by a throw.

The class of junior boys is divided into two teams of about 10 players in each, one batting and the other fielding.

Danish
Rounders.

The diagram shows the arrangement of players.



... of the opposite
ground, he can take
all. If the ball is
thrown from the

ball over the goal line
when the ball passes
caught before it touches

... over one of
... to the point where it

to re-start the game.

i saw two teams of about
100 hunting and the other

Wm. of Dover

1th
3rd

The ground is marked out 20 ft. by 10 ft. A rope or net is stretched across the court, at a height of 5ft 6 inches. A serving circle a yard in diameter is marked in each court about three yards from the rope. There is no limit of the number of boys playing the game, but 9 is the suitable number.

The players are divided into two equal teams and should be scattered methodically.

The object of the game is to keep the ball in lively play towards the opponents' court, as each team scores only on its opponents' failures to return the ball or keep it in the air.

One member of the team winning the toss stands in the serving circle. He tosses up the ball with one hand and hits it with the palm of the other hand over the rope into the opponents' court.

Each member of the circle serves in turn. A served ball may be assisted on its course by the other players of the servers side.

If the ball touches the rope and passes into the opponents' court it is a *let*, but if it drops into the server's court or passes out of the opponents' court, the server loses his service.

The serving side can only score and shall continue to serve, until the service is lost.

When the ball has been served, members of the opposing side hit the ball back over the rope with the palm of the hand and can help one another in sending the ball over the rope; but if the ball touches the ground, a point is scored to the serving side; or if the serving side makes the same fault, the right of service passes to the opponents. The game is played with an ordinary football.

The game can be played on a small playground and the goal Hand Ball may be marked on the walls. If the playground has no walls, two posts each side at a distance of four feet and about six feet in height should be posted for goals. A semicircle of two yards' radius, whose centre is in the middle of the goal, is drawn in front of each goal.

The number of players in the two teams will depend on the size of the class and the amount of space available for the game. The teacher is to use his own discretion as regards the number of

boys who can play at the same time. The object of the game is to score goals by throwing the ball into the opponents' goal. The goal keeper stands inside the semi-circle to guard his own goal.

The referee bounces the ball in the middle between two opposing players and the game is started. The players pass the ball among their own players till one gets a chance of throwing the ball between the goal posts.

Rules:—

1. Players shall not hold the ball for more than 3 seconds.
2. Players may not take a complete step with the ball in hand.
3. No player, except the goal keeper, is allowed in the semicircle round the goal.
4. If two players hold the ball at the same time or make a foul, the referee shall bounce the ball between them.
5. All roughness or use of unfair means shall be penalised by giving the ball to an opponent.
6. Players except the goal keeper may not beat the ball with the hand.
7. After a goal is scored, the referee re-starts the game by bouncing the ball between two players in the centre of the playground.

This is one of the most popular of American games and it **Captain Ball** cannot be too highly recommended in India. It can be played in various forms according to the number of players and the space available. The following is one of the simplest types.

The playground is divided into two halves by a line drawn across the middle. On each side of the half-way mark, are drawn circles, about one yard in diameter and at corresponding distances from the centre of the ground. The game can well be played with an ordinary football and the circles should, therefore, be far enough apart to admit of easy and accurate passing by hand from one to the other. The players are divided into two teams each of which consists of base men (who must not move out of circles), guards (who work in the territory of their opponents), and a fielder (whose general place is near the middle line and who retrieves the ball if it goes out of the area of play).

One of the base men on each side is captain and the object of the game is for the basemen on his side to pass the ball to him so that he catches it, one point is scored each time the captain catches ball. Passing from base men is intercepted by hostile guards who can run about a short distance to seize the ball.

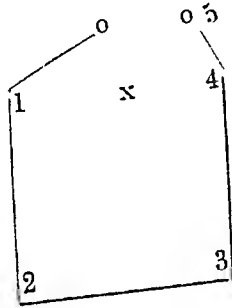
The umpire throws up the ball near the centre line between the two fielders each trying to catch it as it descends. The one who catches the ball tries to throw the ball to his base men, and so on, towards the captain. The hostile guards endeavour to intercept the ball and, if successful, they throw it over to one of their own base men in the other area.

The following rules must be observed :—

1. The ball may not be held by a player for more than three seconds.
2. No player may run with the ball in his hand.
3. The ball may not be pushed or snatched out of opponent's hands.
4. No player should be tackled.
5. The ball must not be kicked.

6. No guard may step inside a circle nor should a base man step out of his circle.
7. If the ball goes out of the field of play, it should be thrown by the umpire in the centre of the ground.
8. The ball may not be passed directly from hand to hand, but must be held in both hands *and if held simultaneously* by two opposing players, it should be tossed up by the umpire between the contesting pair of players.

This game does not require so much space and good ground Rounders. as cricket and as it is played with a tennis ball and a small bat 24 ft. by 3½ in. it is very cheap and is suitable to Indian climate. It has an advantage over cricket for a larger number of players are engaged in the play at a time. To give greater facilities to a larger number of players, the bases may be increased in number as shown in the diagram.



The umpire stands on the left side of the bowler and keeps Rules:— time. His decision is final and is given without an appeal. If available another umpire is appointed to watch the bases.

The object of the game is to make runs or rounders. A 'run' or rounder is complete when a player reaches all the bases;

if he does so in one run he scores as many points as there are bases, otherwise he scores one point only.

The bowler delivers the ball underhand and must pitch it above the knee and below the shoulder of the batsman. If the ball is not properly thrown the umpire declares "no ball."

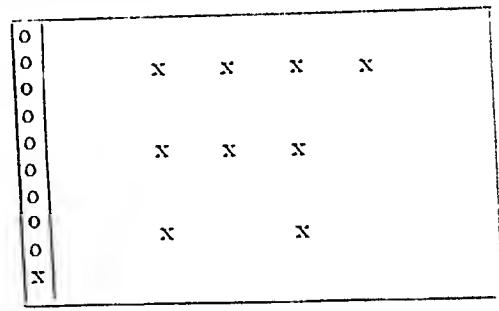
A player running to any base must touch it before any fielder touches it with the ball in hand or he is out. A player having left his base may not return, but must proceed to the next base. One runner only is allowed at a base at one time.

All the batting side is out if at any time there is none to bat.

The referee may declare before hand that all the players are out if three or five players are out.

Long Ball, The class is divided into two teams, each of 10 to 15 players.

The diagram shows the arrangement of play and the measurement of the ground.



Back Goal Line.

The bat may be a small base-ball bat and there should be a tennis or semi-solid ball.

The captains shall toss for in and arrange their own teams.

The server shall stand in goal and shall warn batsmen before serving. The batsman may claim another service if it is badly served, and he has not attempted to hit the ball. The server is allowed to throw the ball before he serves if he sees that some of his opposing players have intended starting running. As a rule one ball should be served to each batsman.

The batsman may hit the ball hard or gently or not at all, but if he hits the ball outside the side line or if his hit is caught, all the players of his team are *out*. He should try to hit the ball beyond the back goal line.

A player scores a run to his team if he runs from goal to back line and back again if his team is not *out* meanwhile. He can break his run by waiting behind the back line for a favourable opportunity to run. A batsman may not run immediately after making his hit, he can stay in goal and run when an opportunity occurs from another member's hit.

A number of players can wait at the top goal line or back goal line at the same time, but if there is no player to bat, all are *out*.

The fielders must not actively prevent their opponents from running. No run shall be started when the ball is in the server's hand.

The playing team is *out* if any of its players run over the side line, or is hit and if any of its players is hit by the ball whilst running for the goal or top line. The team is also *out* if the opposing team catches the ball from a hit.

No player except the server may take more than three steps with the ball in hand. He must aim at a runner or pass to another fielder. If more than three steps are taken or if the fielder holds the ball for more than five seconds, the hit is invalid.

n.

l-

r

2

Back Goal
Line.

If a runner is aimed at by a fielder and missed, he is allowed to run straight back to goal freely or otherwise. Although he may not have reached the back goal line, he scores a run.

If there be only one batsman left in goal, he shall be served to twice, unless he runs on first ball.

The team scoring the most points at the end of the time wins.

The players are divided with equal teams and two goal posts of about 18 feet apart are posted in each side. *Boys Rugby. The players may be distributed as in football but there need not necessarily be 11 players in each side. If the play ground is spacious no less than 18 players may form a team.

As in football the centre forward is given the ball and he throws it to one of his comrades. The one who gets the ball may run with it, but, when he is touched by one of his opposing team, he must pass the ball at once. If he, however, runs with the ball more than two steps, he makes *foul* and the ball is given to his opponent for free *throw*. The goal is scored when the ball is passed through the posts of the opposing team. There is no offside but the field may be marked and a free throw is awarded to the opposing party when the ball crosses the line.

C.—OTHER GAMES.

The players may be divided into a number of groups according to the size of the class and stand in one corner of the playground. Another corner is marked almost diametrically at the other end of the ground. The players of each group are marked after a bird say, a pigeon or a cuckoo, and are to run to the other corner supposed to be the nest of other bird. A player or two of the opposing team take the part of the bird catchers and stand midway between the nest and the players.

*Author's modifications.

The teacher blows the whistle whereupon all the players run from the forest to the nest, but the bird catchers try to intercept them. Should a bird be caught by the bird catcher, it is dead and those which reach the nest count one point to their side.

N. B.—The players should be taught to make the chase interesting by dodging in various directions.

Various modifications in this game are possible; as, for instance, the number of *catchers* may be increased or the *birds* are to run to the *nest* more than once.

One player is chosen to be fox and another to be gander. The remaining players all stand in single file behind the gander, each with his hands on the shoulders of the one next in front. The gander tries to protect his flock of geese from being caught by the fox, and to do this spreads out his arms and dodges around in any way he sees fit to circumvent the efforts of the fox. Only the last goose in the line may be tagged by the fox or should the line be long, the last 5 or 10 may be tagged as decided beforehand. It will be seen that the geese may all co-operate with the gander by doubling and re-doubling their line to prevent the fox from tagging the last goose. Should the fox succeed, the goose tagged becomes fox and vice-versa.

N. B.—This game is found in almost all the countries under different names and representing different animals.

The class is divided into two teams of about ten players each. The ground is marked as shown in the diagram varying in area in accordance with the number of players and the space available.

The players of a team stand at the base of the two columns (1 and 6) and the players of the opposing team called the

guards stand in the narrow lane between the columns as shown in the diagram.

The players of the running team may be equally divided and try to get into the columns 1 and 6 at the given signal. Those who are touched by the guards are *out*. If a player succeeds in going round all columns and returns to his place, he gains one point for his team.

The guards can run only in a straight line and may not change places with those running at right angles or parallel to them.

After a fixed time the teams change places; the team scoring the greatest number of points wins the game.

	0	
3 — 0		— 4
	0	
2 — 0		— 5
	0	
1 — 0		— 6
X X X		X X X X

Kabaddi
(Indian)

It is perhaps the most popular of all the Indian games and is played all over the country.

The class is divided into two teams of players from 6 to 15 according to the space available.

A centre line is drawn separating two teams. The team winning the toss sends one of his players to the other side crossing the centre line. This player dashes into his opponents territory, tries to touch the players of the opposing team and runs back to his side. This player must keep his breath and if he takes another he is *out*. On the other hand, if he touches his opposing players and returns successfully, those players who are touched, are *out*.

The players of the opposing team will try to catch him and if they succeed and he loses his breath, he is *out* and must leave

the play. The other team can now make one of its players who is *out* join the game. Thus a player who is *out* does not only go out of the play, but also adds a player to his opposite side. Only one player goes to his opponents' realm at a time and alternately. If two by mistake go to the other side and are touched by their opponents, both are *out*. That party wins which has a large number of players in its side in the end of the game.

This game has many advantages for it requires no apparatus and no special ground and can be played in moonlight. In India the days in summer are often too hot for open air activities and some games are to be played in twilight or in scanty artificial light.

Kabaddi is a very useful game in those poor localities where space is insufficient for games like hockey or football, but to make it a successful team game, we suggest the following modifications.

1. If a player *kills* his opposing players, those players thus *Killed* may not leave the game, but give points to their opposing team (one point is given for one player). If a player is caught by his opposing player, the opposing side wins a point. This slight alteration in the game will keep all the players engaged all the time.

2. If a player is caught by one of his opposing team, other players may not all attack him, but simply come in his way to escape. This small change will save many an accident, which is likely to happen when a number of players attack one at the same time. Moreover, it will give an opportunity to two players for a short single combat. Should he escape maintaining his breath, other players of his opposing team can catch hold of him, but more than one player shall not deliberately attack him. Should he again manage to escape with the same breath, he gains points according to the number of players he has touched.

Only one referee can supervise the game. He should discourage the players coming with loose clothes, e.g., a dhoti.

It is a very nice game for our country children. The ground should not, however, be rough or the fall may often be painful.

This game also gives a very good breathing exercise.

This is only a modification of an old Indian game and can
Til (Indian) be played as follows:—

The class is divided into two or more teams of about 10 players each according to the size of the class. Two teams can play at the same time. The team that wins the toss takes the lead and the other chases it. The game is arranged as shown in the diagram.

x x x O x x Q x x O x x Q O Q O Q @

The leader of the chasing team stands in one corner and his friends Q Q Q sit in one line facing opposite sides alternately. The players of the running team stand towards the other corner between the players who are sitting. At a given signal the leader dashes to catch his opponents to any side he likes, but once he has started he cannot turn back. The players of the running team can run through the players who are sitting and can thus easily escape the leader of the opposing team.

If the leader touches any players before they pass on to the other side they are *out*, but if the leader fails to do so he can sit behind one of his comrades saying "Til". His comrade gets up and can run either to his right or left to catch his opponents. Any body touched is *out* but if once he runs to any side, he cannot, like the leader, change his direction, but he can sit behind the back of one of his friends saying "Til". The new player dashes forward to catch his opponent and so on, till the time allowed is over.

By proper dodging and by quick changing of the chaser.
the game is made fast and interesting.

The teacher may give equal time to each team, note the
catches and award marks to each team.

HIGHLY ORGANIZED GAMES.

The games which we have classified under this category
are those which require very high degree of specialization with
special apparatus and play ground. We admit that there is no line
of demarcation between the games we regard as 'minor games'
and 'highly organized games' which we have put here and that
games like rounders or net ball need perhaps as much organiza-
tion as football or la crosse. The distinction has, however, been
made on the ground of their popularity in India, for most of our
schoolmen still believe that Cricket, Hockey and Football are the
only games which require organization and should be played in
schools. Being very popular we comment on them briefly as
follows:—

The actual invention of the game is shrouded in mystery.
La crosse but there is no reason to doubt that it originated
with the North American Indians. It was first in-
troduced in England by Captain Johnson's troops of American
Indians in August, 1867.

Lacrosse is an admirable game for an Indian climate and
soil. It does not require any special ground like hockey or foot-
ball and have very few rules to observe. Moreover, the whole
class can play the game at a time as the number of players can be
increased or diminished without any serious loss to the game.
In hills or in rural districts where it is not possible to
get a level ground for boys, lacrosse is preferable to hockey or
football. Its most distinct feature to a spectator is that it is
played on the run and that the ball is played by throwing and
catching with long netted sticks.

Football, probably the most widely played game in the world, is another game played all over the country. On account of cheapness it has a most powerful influence in the direction of democracy and is thus a game which we think develops the greatest power of co-operation and mutual help. For promptness, readiness, as well as speed, for pluck and endurance, for strength and for giving most delightful exercise in most weathers and all kinds of grounds, it has no rival even in hockey. We should here suggest that it should be played all over the country during rains, but, in other times, when the ground becomes hard, as it is in most of the places in India, it becomes dangerous and may give place to hockey.

It is perhaps the most popular of all the games played in India and certainly among the finest of English games.

Hockey. We believe it has a great future before it, specially in India where the soil is very suitable for the fast travelling of the ball. It has most of the advantages of football and has some of the advantages of cricket, in fact it stands midway between the two commonest games of cricket and football. It requires greater skill and finer judgement than football, while it does not take so much time as cricket nor is it so expensive. We recommend that it is a game which should be played in all high schools of the country at all times except during rainy season when football must take its place.

For economizing time and space, hockey may be played six-a-side. In six-a-side game all the rules, especially sticks must be observed; but like polo there should be no off-side. If the field is 100 by 55 yards, the game may not be played for more than 20 minutes 8 and 7 minutes each time and 5 minutes' interval. If the ground is 60 x 40 yards, the game may be played for 25 minutes; 10 minutes each time and 5 minutes' interval. The game will lose much of its interest if it is played on a ground of less than 60 x 40 yards. By proper supervision and by improving the ground we can minimize the danger of accidents in the game.

It is certainly one of the best of English games and may very rightly be called the "king" of games. It is

Cricket. really a very fine winter game in India and should be encouraged in all high schools for more than one reason. Its athletic side, e.g., fielding and bowling must be emphasized and it may be made far less expensive by proper supervision than it is supposed to be. The excessive importance of a single mistake either in fielding or batting is certainly a great drawback for young pupils, but it has its advantages too, for it will keep the boys always alert and careful in the game.

This is another very popular English game and is widely played all over India. It can easily be kept up late in life and is very suitable for Indian climate. It is

Tennis. an individual game as two, or at the most four, can play it at the same time.

To make it a team game and less expensive, we suggest the following modifications in the game :—

C	B	A
		x
x	x	x
	x	x
x	x	x
		x

The playground is divided into two equal parts as shown in the above diagram by a line drawn across the middle. Over this line a net or cloth or even stout cord should be stretched tightly from side to side from 4 to 5 feet above the ground. The players are divided into two parties and are placed as shown in the diagram.

Squad A stands along a line about 5 yards from the middle with gaps to 3 to 4 feet according to the space allowed

and a ring is made which will restrict the movement of the players. In B the ring is larger and in C still larger, because the number of players are fewer.

A tennis ball is used for the game and is put into play by being bounced on the ground and struck forward with the hand as it rises. It must always get over the net or cord and may be returned by the opponent who is in the most convenient position. The referee must see that no player goes out of his ring to strike the ball. The return may be made either before the ball touches the ground or when it has bounced once as in lawn tennis; scoring is effected by failure to serve or return properly. Scores may be made like tennis. After every faulty return and also in the case of a bad service (one service only) the ball must be given to the other side for a new start. The serving is done by line A taken in rotation and any player from the other side may return it.

If the ground is rocky as in Central India or Central Provinces or dusty as in Rajpootana, a thick ring of rope or rubber may be used for a tennis ball. The net or cord must be between 5 to 7 feet high according to the height of the children. The ring is thrown in service from the players standing on C line and is caught by any player of the opposite side who in his turn throws it back to the other side. The ring should not fall on the ground or be caught simultaneously by two players. Points are registered as in the game of tennis.

CHAPTER III.

Athletics.

Games, alone, are not enough. The school should have exercises which bring into use nearly all the muscles of the human body. Athletics are best for this purpose for they are not only fine recreative exercises, but demand greater strength and prowess than games.

But in order to encourage community spirit and to minimize the evil effects of individual competition, the class may be divided into a number of small teams from six to ten according to the size of the class and a certain standard is set which every individual must try to reach: as, for instance, in running broad jump every child should endeavour to jump a certain distance fixed as a standard; if he succeeds he scores a point for his team.

It is advisable to determine the standard by taking the mean of the efforts of the whole class. After a few weeks when an average boy reaches the standard comparatively easily, it should be raised according to the discretion of the teacher. We are sure that if this kind of team system in athletics be introduced in schools, we shall be able to eliminate many of the vices of individual competition. The moral effect of such a system in athletics is great for even the slowest and the laziest child will endeavour his best when he sees that he lets his team down.

The following athletic sports are recommended for our schools:—

SECTION 1.

This is an excellent exercise for giving vigour and volume to the muscles, more particularly to those of the arms and shoulders. The sport consists in ascertaining who can *put* or cast a heavy stone or iron ball to the greatest distance.

There are two descriptions of weights thrown—the light and the heavy. For a strong lad of from 12 to 16 years the light ball may be 10 lbs, and the heavy 14 lbs; for an average boy 8 lbs and 12 lbs should be used. For boys of short stature weights of 5 lbs and 9 lbs are quite enough. To be brief, the weights should be such as the youth should at all events toss up 2 or 3 feet if it is a light ball and catch again in his hands. The heavy he should just be able to raise with ease, up and down, from his shoulder to his head. The weights being thus proportioned to the strength of the pupil he must throw accordingly. In casting the heavy ball, he should make no attempt to swing or wind the ball, but merely thrust it forwards from his shoulder, at an angle of 45° , throwing, at the same time, his whole united force, both of shoulder and body, into the task; and springing at the same instant from the ground; changing feet with the spring, the right foot now toeing the score line and the left elevated, extended behind him. It must be remembered that the score line must on no account be crossed *following the throw*, as it is contrary to rule. With the light ball, on the other hand, he may attempt a sort of wind or sweep, in combination with the cast. The other movements are the same.

If, from necessity, stones be used instead of metallic balls, it is necessary by poising them in the hand to discover the centre of gravitation. In this case too, it is a capital plan when the position of the centre of gravity permits to get the fingers of the right hand round the back of the stone, specially if it is a light one; if heavy it may be acted on just as if it were a heavy ball.

It is not here possible for us to express on paper the precise knack on which *putting* depends, but the pupil should be trained to throw with both the hands and a record may be kept for maximum throwing from the right and the left hand.

This is an old Greek sport introduced to general athletic practice after the first modern Olympic games in 1896.

Throwing the Discus.

The discus is, roughly stated, the shape of two saucers, placed edge to edge. It should be about 4 lbs in weight and about $8\frac{3}{4}$ inches in diameter.

Two methods of throwing are in use:—

(a) Free style and (b) Greek style.

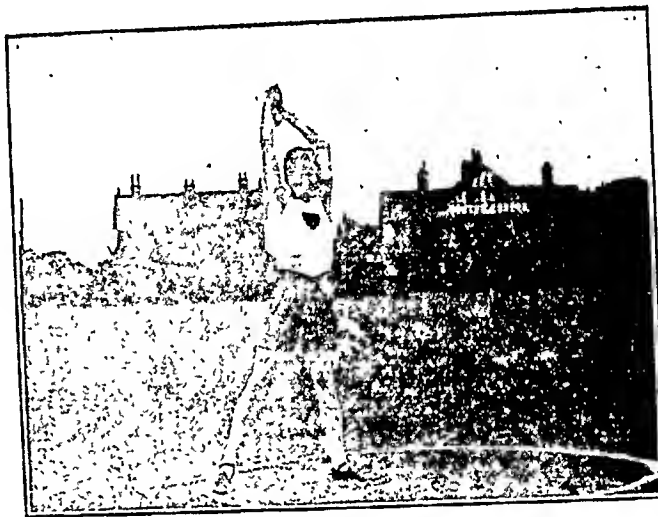
(a) Free Style.

The discus should be held against the palm of the right hand with its edge supported between the first and second joints of the fingers. The thrower should step into the 8 ft. $2\frac{1}{2}$ in. circle and place the outer edge of the right foot on the inner edge, at the rear, on a line with the direction of the intended throw. The right arm should be held horizontally and swung back and forth, down across the body in the direction of throw. When the discus has been swung far back with sufficient force, the thrower should pivot on the left foot and crouch slightly making one complete turn if necessary. He should, then, straighten the body, and, with a strong throw upward and outward, send the discus into the air, at the same time making a spring with the feet to transpose their position.

(b) Greek Style.

In the Greek style the contestant stands upon a small sloping wooden block, called the pedestal or he may throw from within the seven-foot circle. He should hold the discus between both hands and over his head. His right leg should be in advance of

the left. The discus is now brought entirely to the right hand and then the left hand is brought to the knee. Then with the quick straightening of the knees, a jump forward, and an upward swing of the right arm, the discus should be released. This style is now practically abandoned.



(FIG. 30.)

This is distinct from quoit—playing, which is so popular on board a ship, the object here being not the attainment of any particular mark, but merely the casting of the quoit as far as possible. This sport is nearly identical with the ancient and classical one of throwing the discus, the difference consisting in the discus having no central hole. The quoit is generally from 8 to 10 lbs in weight, but for school boys a quoit of about 3 to 5 lbs should be used. It has like deck quoits, a circular hole in the middle, by which it is grasped. The knack consists in thrusting the fingers through the quoit, having the palm of the hand away from the thrower and the thumb consequently outward. The left foot is moderately

advanced, and in casting, let the outward rim of the quoit be first released.

This sport is Caledonian in origin. It is a fine medium for exercising the muscles of the loins, shoulders, and back, indeed of the entire frame. As in the case of putting the weight there are light and heavy hammers—the weight being according to the strength and the stature of the pupil.

Both the hammers are thrown in the same manner with the exception that the light one has a longer and thinner handle and is thrown by the right hand alone, the heavy hammer is thrown with both hands.

The hammer may be thrown either *standing* or with the *turn*; the former implies that the hammer is simply hurled from the hands as far as the thrower's strength can cast it; the latter confers a great deal of extra force upon him. To *turn*, the pupil should retire three of his paces, or rather more, behind the score from which he is to throw; he then grasps the hammer, if it were the light one, in his right hand; if it were the heavy one, with both hands. The thrower should then elevate the hammer towards the left side of his head and swings it round him in the direction of his legs, *turning* at the same time in unison with the motion; at the third swing the thrower should reach the score line and the hammer is delivered, as nearly as possible, at an angle of 45° . The usual error consists not so much in throwing too high as too low.

This exercise consists in casting a long and heavy bar of iron (a beam or a log of wood may do equally well in village schools). Some are in favour of darting the bar in the same manner as a javelin; others recommend it to be taken

Throwing the
Bar

laying, which is so popular here being not the attainment, but merely the cast. This sport is nearly identical of throwing the discus, the having no central hole. The 0 lbs in weight, but for school 5 lbs should be used. It has the middle, by which it is thrusting the fingers through the and away from the thrower and 4. The left foot is moderately



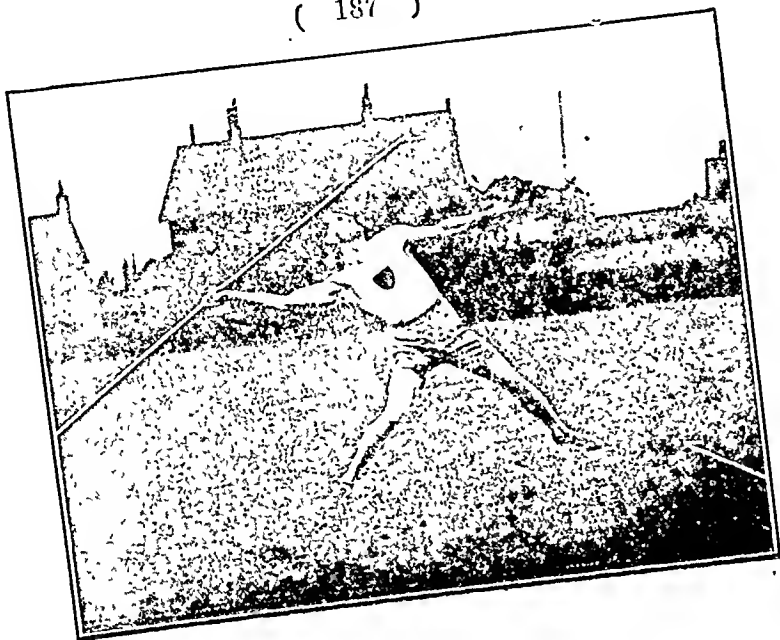
hold of like the hammer and swung round. Our own opinion is decidedly in favour of the former mode, but the pupil may be allowed to make his own choice.

It is an old Grecian sport and has grown into popularity in Europe since the first modern Olympic games in 1896.

It is a nice exercise involving the working of the muscles of the arm, chest, shoulder and trunk; the legs should also bear a part—all operating to effect a single, sudden and violent movement at a given time.

The javelin is a simple wooden shaft of hard wood, that will not vibrate, about 8 ft. 6 ins. in length, tapering from an inch and-a-half in diameter at the thick end to about an inch at the thin end, which should be tipped with an iron spike about two inches long. These spikes, if made to order at the forge of a local blacksmith and fitted by him on to the rods, will be servicable and cheaper. It will be a very interesting exercise if a mark to be hit is made. For this a target will be required and it may be made out of any convenient material, and marked to suit the fancy of the players; it should be, however, of some soft material, so that a well-thrown javelin will, when striking it, become embedded at the tip.

To throw the javelin, it should be balanced in the hollow of the hand from which it is to be thrown and held a little above the shoulder; the shaft is then to be firmly grasped with the fingers, the thumb being extended along the fingers, the left leg is to be advanced and the body balanced on the right leg. After the aim has been carefully taken, the javelin should be hurled towards the object to be hit, and to secure the requisite momentum it will be necessary, when in the act of casting the javelin, to bring the body quickly forward from the right on to the left leg.



(FIG. 81..)

N. B. — Ordinary lathi may be used for javelin.

A circle 6 to 9 feet in diameter is drawn in which the thrower stands. Lines are drawn one foot apart at right angles to the line of direction of the throw, the first line being 15ft from the circle.

The ball should be held in the right hand over the right shoulder. The feet should be in astride position, the left foot forward, toeing the line across the centre of the circle, the right foot back, with the right knee bent and sustaining the weight.

A player making a throw must leave the circle by the rear half. Instead of throwing from a circle, a straight line may be drawn on the ground behind which the thrower stands. As a rule each player should be allowed but one throw.

For a change the throw may be taken with both the hands or as an underhand throw.

To conduct this as a team event, the distances of all the members of a team are added and the total is divided by the number of players in the team. This will give the team average; the team with the highest average wins.

The ball shall be thrown behind a scratch line and all throws shall be measured perpendicularly from the scratch line or the scratch line produced. Three throws shall be allowed in case of an individual competition and only one throw in case of group competition and the thrower in delivering the ball shall not cross the scratch line.

SECTION II

In walking the whole column of the body is slightly inclined to the front: the lower limbs are slightly lifted upward and forward, with every extensor muscle relaxed, and every joint mobile and free. The foot is not placed flat, or all at once, upon the ground—indeed in rapid walking the whole of the foot is never on the ground at the same time. The heel first meets the ground, and the contact gradually extends from it to the toes, the heel being lifted by the time this act is accomplished. The arms are allowed to swing to front and rear in alternated action with the limbs.

Exercises in walking should be practised even in the earliest years of school life. A child almost always walks with its legs further apart than a grown-up person. The feet are turned out but point straight forwards, or in many cases the toes actually turn in. The steps are of unequal length and, therefore, irregular. It has been particularly noticed that the left foot often takes longer steps; this may be due to the more powerful muscles of right leg.

The average length of the step depends partly on the height of the body, the length of the foot, etc. We may here warn

that children or boys of different height should not be made to walk in step together.

Too long a step is tiring for ordinary walking but for athletic purposes a long step is necessary. Too short a step again is not good for ordinary purposes.

We have already discussed marching in gymnastics, but we say again that for an average school-walk or march 112 to 114 steps a minute should be suitable and the carriage of the body etc. should be frequently supervised. In marching in time it is a rule to lay special stress on the first of every two steps, and in general it is every step with the left foot which is so emphasized.

This is one of the hardest races in athletic sports and only the bigger boys should be allowed to have it.

Athletic Quick Walking.
In this walking, as the right leg swings forward, the right arm and trunk come forward also, when the left leg swings forward the left arm and trunk also follow it. Here then it differs from ordinary walking where the right arm goes back as the right leg swings forward.

Before a body is quite used to this way of walking, which has a long stride from the very outset, it should be taken at a very small pace. Until a boy is thoroughly trained to keep a good style of moving, he should not practise covering a short course at the top of his speed; after requisite practice he should, at the signal for starting, step out at once at his utmost speed.

Athletic walking requires a heroic endurance and to keep it up means extraordinary muscular effort. The violence and the stretching and straining of the muscles are apt to bring on severe muscular pain, even in those who are in practice.

Athletic walking is not of much importance for the training of boys inasmuch as the practice for it is often so severe that while it lasts, it practically excludes other forms of exercises. This is a valuable exercise to our country boys who are used to long walking, but even such boys should practise athletic walking with moderation.

Cross-Country Race It is chiefly an exercise in endurance and should be a pleasant change rather than an exercise in speed. It should not go on after general fatigue has shown itself. It is specially good for boys living in towns where they cannot enjoy sufficient fresh air. The racing ground should be as near the green fields as possible, but should be so marked that no short cuts are possible. A number of senior boys should be placed at every corner to direct the runners and also to see that no runner goes out of the running to cut short the distance. The race course should be about 3 miles for boys of 13 to 16 years of age and the class should be told not to run fast from the beginning. To give encouragement to each boy there may be kept certain time limit. Any boy reaching the destination in time scores one point to his side.

Excursion. The pupils should be encouraged in country excursion to walk the whole distance. This exercise may be taken entirely for the sake of pleasure and scenery and there may be no competition at all.

Childhood, before the period of development begins, is admirably suited for exercises of speed, but is not suited for exhausting exercises of endurance; and, therefore, the pupils should be warned, in walking for a long distance, not to step out in quick time at the start, but should begin more slowly, and should gradually increase the pace. The walk should, moreover, be broken by pauses. Of these, the first might be made half or three-quarters of an hour after the start. After that the walk may be kept up for a longer time, the pauses should be short,

about 5 minutes, and during the pauses the body should be erect. A short halt should be made before climbing a steep ascent so as to begin it with fresh strength and easy breathing. An occasional run may be allowed as a change.

The best time for a walk is the early morning. Night walks are seldom to be recommended even in warm moonlit night, for, among other things, night is the time for rest. No exertion should be permitted after a meal.

N. B.—In tours lasting several days special attention should be given to the care of the feet. They should be put in cold water and rubbed at night time. Blisters on the feet should not be opened on the way; they should be carefully treated with Salicylic Ointment.

The food on long walks should be nourishing and concentrated. Good drinking water can seldom hurt, if it is taken in moderate quantities. If the water is very cold the pupils should not be allowed to drink till a rest of a few minutes has made the breathing easy.

Mountaineering is a sort of walking or running up or down an inclined plane. If the ascent or descent be very slow, it can be hardly distinguished from ordinary walking, but when the ascent or descent becomes steep the pressure alters and it becomes a strenuous exercise.

Unless the ascent is exceedingly slight, the advanced foot touches the ground not with the heel, but either with the whole sole at once or with the toes. A very steep ascent makes it impossible for the heel ever to touch the ground, and the climbing movement is then performed on the ball of the foot. This greatly hinders the grip of the foot on the sloping ground and, at last, a steepness may be reached at which the ascent is only possible on rough ground or with spiked shoes.

In a rather steep ascent, the whole body is inclined forwards being bent at the hip and at the knee. In a very steep ascent there is a tendency of using the hands during the climbing, but it should not be allowed for the hands should move in unison with the legs.

For running up hill the ascent should be moderate ; if it is very steep more ground will be covered with walking than with running steps. In *storming a fort* up a steep hill, the movement should not be a run, but by a greatly quickened step.

A certain amount of previous practice is important if the tour is to be a success. Before starting for the mountain the boys should be practised to try a few long walks not only on good roads, but also on cross cuts over stubble fields, stoney slopes, underwood, etc. In the mountains the boys should begin with short and moderate long walks and small heights, getting gradually into training for greater feats.

In mountain tours, the boys should start early in the morning and the longest walk should be in the early hours. The walk should be begun slowly and an ascent should not be made at a great pace. In a steep ascent the boys should be given a pause of about 10 minutes' standing after each hour of walking. In going up-hill on hard dry ground, the feet should be turned outwards ; in going down-hill they should be parallel or even turned inwards. If the weather is dry the boys should be given wet towels to sponge their face.

We cannot over-emphasize mountaineering as a health exercise. Hippocrates has very tersely said that inspiration is possible only on a mountain. Except in the Indo-Gangetic plain of Northern India where hills are not found, every school should allot some time for hill climbing especially during rainy days when there is an additional advantage of scenery.

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The excess of everything is bad and the mountaineering, if overdone, is likely to be injurious to the weak scholars; but if it is conducted in the right way, it has the following advantages:—

1. The skin, kidneys and lungs get rid of moisture rapidly, thus helping to remove the appearance of fatness.
2. The amount of breath is increased, and the lungs work harder.
3. The circulation of blood being increased by the exercise, the heart works harder and its muscles grow stronger.

N. B.—A substitute for mountaineering, though a very poor one, is going upstairs and another is the mountain climbing apparatus in the gymnasium; but a much better substitute will be to make an inclined plane in school garden. In country schools where there is no scarcity of space, the boys may be trained to make a long narrow plane of a few feet broad in the vicinity of their school.

The exertion in going down-hill is far smaller than in ascending, and it is chiefly an exertion for certain knee muscles; hence the lungs and heart do not get much exercise and, in fact, in coming downhill, the effect on the pulse is very like that of an actual rest: but the fatigue, specially if the road is very steep, is considerable and is quite out of all proportion to the exertion.

Sprinting is the technical name given to the running of those short distances over which a man can *spurt* or *sprint* at top speed without a break. The rough-and-ready experience of the last generation has decided that 300 yards was the utmost limit of sprinting distance.

In short sprints the start is almost half the battle and the pupils should be continually trained to make a good start. The so-called crouching start is almost universally used for sprint races, but there could be no special rule about it. We need perhaps hardly describe the right attitude of the body for a start in these days, when every teacher in the town has perhaps seen some really good sprint. Still for the guidance of country teachers we may say that the runner should be on his toes, with the right foot 7 or 8 inches behind the left foot which is on the line so that the chest is almost parallel to the line and bent slightly forward. Some would prefer in starting to stretch their right arm forward so as to bring the chest completely straight to the line, but this cannot be adopted by all. The body should be balanced on the toes with the weight pressing slightly upon the right or rear foot, so that a good kick may be obtained from it with the slightest possible delay when the pistol shot is heard.

In the absence of a friend it is not a bad device for a beginner to practice short races by flinging a stone over his head in the air and start as soon as it is heard to fall to the ground.

Races over 300 yards in length and less than a mile are called middle distance races. These races have the advantage that they require both high speed of the short race and endurance of the distance race.

The next distance beyond the 300 yards sprint is the quarter of a mile. Generally, it is the most interesting of all the races, as it gives an opportunity both to the one who has a real sprinting space and to the one who has stay and strength. The distance covered being short, the time gained at the start is of much importance. The crouching start which we have already explained may be taken, but for races above the quarter mile a standing start is usually made.

In India where the climate is very hot in summer and comparatively warm in winter except in the north west the middle distance races—440 yards, 880 yards, 1320 yards should be more emphasized than long distance ones.

In training for long distance races in which category we place those at a mile and upwards, improvement of speed is of course the object of attainment as in every other race, but the improvement is that which comes from increased staying powers and wind ; and for the purpose of training, it is these latter alone which must be cultivated. The system for all training for long distances, to describe it shortly, is to take continual and daily spins of half a mile and upwards, the pace being gradually increased as the pupil finds he can stand it. If the runner takes a long spin or a fast spin one day and finds upon turning out the next day that he feels slack from the previous day's exercise, he will do well to take an easier day's work on that occasion. All what a runner requires is that amount of exercise which will make his limbs hard and the wind abnormally good.

As there is a great danger of overdoing these long races we feel obliged to remark that in towns where the boys are generally physically weaker than their comrades of rural areas long distances races may be discouraged ; but in country schools where the boys are accustomed to long walking and running, the boys may be trained to run a mile and a three-mile race.

A relay race is one in which the competitors make a team. We have already discussed short relay races as team games in the previous chapter. We are, here, concerned with such relay races in which the distance covered varies from 300 yards to 4 miles.

The distance is divided between several runners, usually four, each running a part of the distance and touching (or handing over a handkerchief or a flag) the hand of the next runner on his team who stands waiting for him. This *touch-off* is the signal for the next player to run. A distance usually of 20 ft. is allowed for this touching of hands and a team is disqualified if one of its players starts over the 20 ft. line without the *touch-off*.

A hurdle race is a combination of running and jumping.
Hurdle Race. It is a running race in which the competitors jump over hurdles. In America these hurdles are made to swing or turn over easily, but in England they are fastened securely.

Hurdle races are run over a total distance of from 40 yards to 440 yards the number of hurdles varying according to the distance to be covered.

The standard distances for hurdle races are 120 yards with 10 high hurdles (3 ft. 6 in.) and 220 yards with 10 low hurdles (2 ft. 6 in.) In school athletics the height of the hurdles must vary according to the stature of the pupils. To avoid accident the hurdles should be made to swing.

Hurdle races are very interesting exercises and should be included in school athletics.

Two runners shall stand beside each other and shall have their inside legs strapped together just above the ankles as well as above the knees with strong canvas or handkerchief.
Three-legged Race

Competitors must be in and covered by a strong sack which is extended up to and tied around the neck.
Sack Race. The sack should be wide and long enough to cover the runners easily.

SECTION III.

Jumps are excellent exercises in athletics and should be encouraged in schools. They are discussed in detail in gymnastics.

The following jumps may be taken in athletics.

1. Long Jump with free run.
2. Standing Long Jump.
3. High Jump with free run.
4. Pole Jump.

SECTION IV.

In gymnastics we have dealt with individual contest of the Tug-of-war. shape of tug-of-war. In athletics we consider the whole team as a unit requiring great co-operation and training.

A team should consist of from 6 to 9 boys.

The rope is divided into two equal parts, a white tape being wrapped round the centre point. On either side of this point at a distance of 9 ft. other tapes are wrapped.

The referee places the rope on the ground so that the centre point is resting on the starting line.

On the command "ready" the members of the team pick up the rope and on the word "pull" each member of the team leans back quite straight, the arms stretched and the hands close together, firmly grasping the rope.

A pull is won when the 9ft mark on the rope of the opposing side passes over the starting line.

In all Tug-of-war competitions there shall be one Judge and two Umpires who will be responsible for seeing that the rules are properly carried out.

N. B.—No member of the team shall:—

1. Wilfully touch the ground.
 2. Use gloves or adhesive substance.
 3. Make any hole in the ground.
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PART III.

ORGANIZATION

OF

Physical Training.



PART III.

Organization of Physical Training.

It is comparatively recently that the idea of having a sound system of physical education in all grades of schools has entered into the minds of the Europeans ; but in India it is still not taken care of. This apathy towards one of the most important aspects of school education is perhaps due to the fact that most of us believe that school is a place for mental training and that nothing better disciplines the mind than a silent and continuous work at the desk. We are not here to show the absurdity of such a belief, but we may point out that the aim of education is to train a child for the battle of life and it is only by equal and continuous development of each and every part of the body that this battle can be fought with success. But if one part develops at the expense of others, the subject of it will remain behind in his subsequent struggles.

Fortunately, our public mind is gradually awakening and we find much talk of physical education all over India in these days ; but there are not many provinces which have done anything substantial in this direction. This backwardness is a little due to want of funds, but is chiefly due to the lack of interest on the part of the school authorities and the teachers. With the limited purse at the disposal of the education authorities it is very difficult to suggest the best way of overcoming these difficulties ; but as the training of teachers is the real foundation of all future progress in physical education the services of a whole time organizer of physical education with a number of assistants according to the needs of the province are indispensable. The organizer must not only be an expert or

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specialist in his job, but needs be a man of liberal education. His duties should be as follows :—

1. The Organizer's attention should naturally be given first to the elementary schools, but his ultimate aim should be to co-ordinate and develop the training in all types of schools.
2. He should pay regular visits to schools to make himself known to the teachers and to learn the conditions he has to deal with.
3. He should occasionally give a demonstration lesson preferably before a whole staff of a school in order to open their eyes to the possibilities of physical training.
4. He should try to open Teachers Training Classes and ask the headmasters to send their assistants to join the classes in holidays or in some special time which the education authorities may fix for the training. The training of teachers is the real foundation of all subsequent progress and nothing else can take its place.
5. As the training of the existing teachers is exceedingly important it is desirable that the organizer should supervise the training of those who are preparing to become teachers.
6. He should bring the teaching of physiology to bear on the curriculum and see that as far as possible this is adopted to the needs of the individual child.
7. He should also organize.
 - (a) Home and Inter-School Tournaments.
 - (b) Playing Fields.

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- (c) Athletic Displays.
- (d) Swimming and Water Games.
- (e) Play Centres.
- (f) School Holiday Camps.
- (g) Nature Study Rambles and Country Excursions.
- (h) Scouting, (if there is no separate organization in his jurisdiction).
- (i) School Athletic Associations.

The responsibilities of the headmaster are, in various ways,
even greater than those of the organizer, for he is
directly responsible for the physical welfare of his
pupils. He should, therefore, not only thoroughly co-operate with
the organizer of physical education, but should also see that
physical training forms an incorporate part of school work and it
only possible when it is in charge of a well paid master bear-
ing the same social position as other assistant masters. He should
point out to the education authorities that if physical training is
left in the hands of a Drill Master who is often recruited from
the ranks of the police constable or the retired soldier it will
stand apart as a separate subject and the educative value
of physical training will be entirely lost. He should also em-
phasize that there should be no difference in the standard of
general education between the assistant masters and the master
in charge of physical training and that some of the assistant
masters should be so trained as to be able to take physical train-
ing classes. In this way, the children, the parents and the
school management will have respect for the subject.

It will not be enough that the master in charge of physical
training has the same status as other masters; he should be well
qualified to discharge his duties properly. For this purpose he

should be under regular training for about a year and should enter into the spirit of the work. Very often a physical training master can teach all the exercises in the syllabus conscientiously and with reasonable exactness and yet the lesson as a whole may be dull, flat and tedious. Unless an atmosphere of interest and enjoyment are added to correct performances, teaching fails to stimulate the responsive effort needed to secure the desired physiological effect.

Mere training of teachers will not give us the desired result ; there should be organization to enable every scholar to take active part in physical training lesson. This is best done by dividing a class into a number of teams, each consisting of eight to ten children. A team leader and a vice-leader should be chosen for each team with regard to his proficiency in the work and his capacity for leadership and each team may be given some designation or be called after the name of its leader.

Before the team system is enforced, the teacher should tell the children in simple terms what the system is and how it works. The teacher may point out, in a few words, its practical advantages and explain what will be expected from the teams; and their leaders should have plenty of scope for taking the initiative from the start ; but the transfer of responsibilities from the teacher to the leaders of the teams should be gradual and must be well within the capacity of the leaders.

It is a good plan to arrange a scheme of team movements and games for a fortnight and the teacher should give the leaders some instruction and guidance in the commanding and handling of their teams. The scheme may cover in the beginning some preliminary lessons, but the team movement must be carried out quickly and in good order, the children running to take up their places in new formations, spacing themselves rightly

and covering as quickly as they can, so as to save as much time as possible for the exercises and games.

During early training the leaders may be allowed to collect their teams, to lead their teams into formations ordered by the teacher, to see that their teams cover properly when formed in files, to provide and place apparatus required and to control their teams at the starting point for agility exercises, such as jumping and vaulting. The leaders should themselves perform the exercises first, setting as good an example as possible and may be allowed to give simple commands for agility exercises e.g. First, ready—go ; next—go and so on. When the teacher commands, Stop ! every one should at once stand to attention and at the command. Change—rounds : or Apparatus—away ! Fall in—the leaders will act accordingly. The arrangements for agility exercises may be as follows :—

Team 1.—Running Over a Rope,
Standing Broad Jump.

Team 2.—Somersault,
Handstanding.

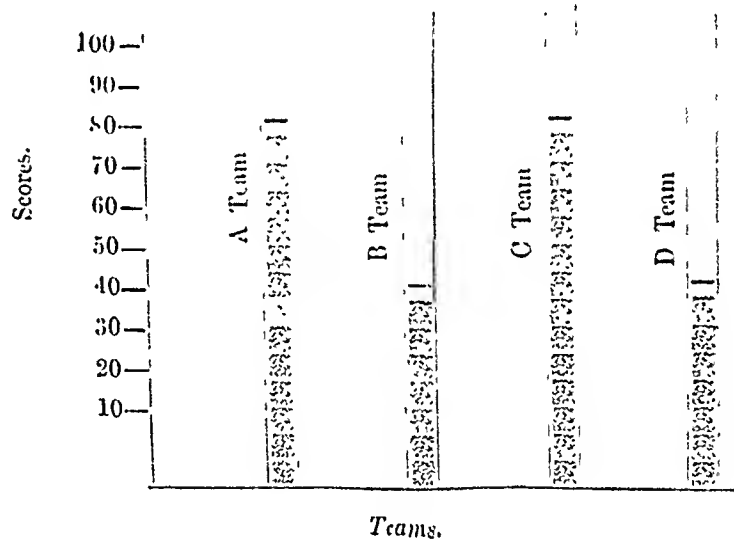
Team 3.—Single Tug-of-War,
Wrestling.

Team 4.—Leap Frog,
Jumping the Swinging Rope.

The physical and moral education imparted through well organized team games is invaluable and the competitive instinct of the child should be properly made use of in the training. The main idea in this system is that the competing team is the unit and not the individual. This is the characteristic of team games and this principle can be applied in all forms of competition, e.g., athletic sports, by taking the performance of each participant as a contribution to an aggregate of the team. It is thus very important that each should try his utmost. The weakest is encouraged to do his best, lest he should let down his fellows ; and the ablest will feel their

Methods of Competing.

best for the common good. The average and not the individual efforts will then become the standard of value and an all-round ability rather than specialization in any one particular activity is encouraged by bringing a variety of competitions into account for the order of merit of the teams. The points gained by an individual should count for his team; but the scores should not be allowed to stand over too long a period or some teams may drop hopelessly behind and become disheartened. It is, therefore, advisable that fresh start may be made after a month, although the scores may be carried forward to a yearly account. A chart showing graphically the numerical positions of the teams at the end of each week may be shown as follows :—



The daily scores of each team may be accumulated and at the expiration of a stated period, e. g.—a month, the winning team should be declared. It may be given a trophy such as a flag or a shield to hold until the end of the next period. All the events must have equal scoring value and the individual prizes may not be given. The yearly charts should be filled up monthly.

In order to add greater interest to the activities tournament, sessions may be held towards the end of the school session; but the fundamental idea, that every body must have equal share in the work, should prevail. For this purpose League Tournament should be held. The winning team may be given two points and the losing one gets nothing. In case of a *drawn match* each team scores a point. At the end of the tournament, the marks of each team are added, the team getting the highest number of points is the winner.

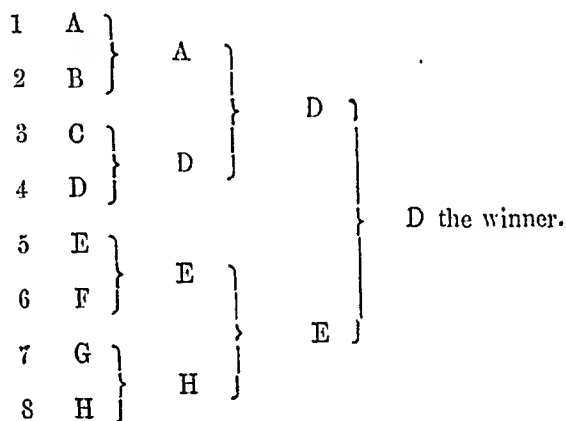
A chart of the following type may be kept to show the score.

	A	B	C	D	Total	Order of merit.
A		2	1	0	3	II
B	0		1	2	3	II
C	1	1		2	4	I
D	2	0	0		2	IV

If the competing teams are many coming from different schools it is not possible to have a league system of tournament.

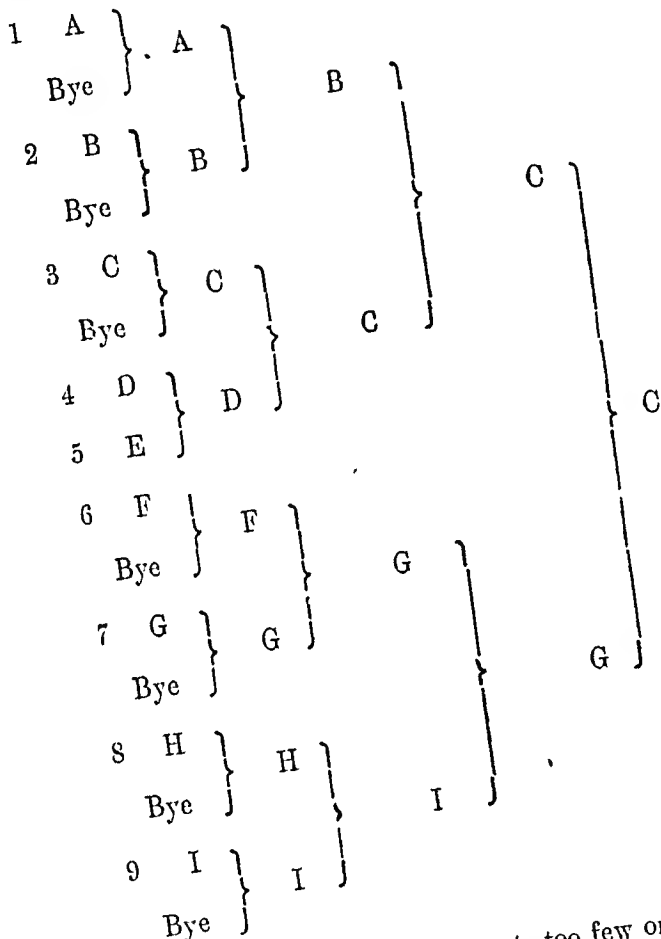
A tournament of the Knock-out system may be held. The names of the teams are written on separate slips of paper and then lots are drawn. Each pair of teams shall have to play in the order of lots drawn, the losing team being knocked out of the tournament and the winners continuing to play till the final result is obtained.

If the number of teams are 4, 8, 16, 32, etc., all the teams have equal chance as is shown below.



But if the number of teams entered do not equal exactly 4, 8, 16, 32, etc. one or more teams will go to the *bye*. It is desirable that the odd team or teams should be kept in *bye* in the first round. The number of teams, to which a *bye* is given, is determined by subtracting the number of teams entered from the next highest number necessary for an even number of ties. If, for example, 11 teams are entered, then subtract 11 from 16, leaving 5 byes; if 13 teams are entered, subtract 13 from 16, leaving 3 byes; if 21 teams are entered, subtract 21 from 32, leaving 11 byes.

Lots should also be drawn for *byes* and recorded on the graph as follows :—



If the number of teams are not too few or too many, a combination of the League and Knock-out system may be made. The teams may be put under two or more groups, each group having its League system of tournament and then a League or a Knock-out system of tournament may be held among the winning teams of each group.

DUTIES OF TOURNAMENT OFFICIALS.

The duties of officials will depend upon the number of the competing teams and the type of competition. The following requirements are usually needed :—

The Games Committee should consist of the Organizer of physical training as its president, one teacher from each school and a few local gentlemen who take interest in the physical activities of the children. The duty of the Committee shall be to select the officials and make a general plan for the competition. They shall see that the officials appointed by them discharge their duties properly but shall, in no way, interfere with the officials appointed by them.

The referee should be well conversant with the rules and regulations and shall enforce them. He shall also decide all points not clearly stated in the rules framed by the committee.

The starter shall carefully see the competitors at marks and shall judge if all of them have started in time. If he thinks that a false start is made, he can recall the competitors by a pistol shot or by a whistle blow. The starter may give a warning to the competitors to "get ready" and then give them start by the report of a pistol or by the word "go."

There shall be a number of judges who will decide the order in which the competitors finish in the competition. Their decision shall be final and, in case of disagreement, the majority shall decide.

As a rule there are three time-keepers. The average of the three times shall be taken.

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OF TOURNAMENT OFFICERS

that will depend upon the type of competition. It is provided:-

Committee should consist of the following as its president, etc:
1. A few local gentlemen
2. Parents of the children. To see that the officials and members of the club are properly instructed by them.

He will convene with the committee and enforce them. He will also see that the officials are properly instructed by them.

He will see that the competitors are properly instructed. If all of them have started, he will see that the start is made, he will see that the competitors are properly instructed by the report of a pistol or by a flag.

A number of judges who will decide which the competitors finish in. Their decision shall be final and no appeal shall be made.

There are three time-keepers. The number of times shall be taken.

The clerk of the course shall keep the names and the numbers of all competitors and shall notify them to appear at the starting time before the start in each event in which they are entered.
He shall keep the record of the successful competitors and shall notify them when necessary.

Scorer



APPENDICES.

APPENDIX A.

Swimming.

Swimming is an art and must on that account alone be learnt by all the school children. It is really a pity that it is not yet much thought of in India, for ability to swim is really a fine attainment of great practical utility. We find almost all our important cities are situated by the side of rivers or near lakes and that the climate is hot in summer and mild in winter. There is therefore absolutely no reason why every child cannot swim at least within Municipal areas of large towns.

Swimming has two special advantages over other exercises. Water not only cools the body in hot weather, but also washes off filthy matters from the body and opens the pores of the skin. In swimming more than any other exercise, health is a main factor; but we do not think that in a hot country like India swimming requires specially strong physique.

Regarded merely as an exercise, swimming is the perfect form of exercise of speed and can, therefore, become an exercise of endurance. In swimming the muscles of the body are used in a different way, the muscles of the legs being forced into vigorous action quite different from running, jumping or riding. Exercises like running or jumping increase the volume of breath, but the rate of breathing is so rapidly quickened that the exercise must be discontinued after a short time; not so in swimming, where breathing should go with the movements on a regular plan, so that the swimmer may counteract the quickening of the breath if he swims in good style, quietly and evenly. The volume of breath must be increased in all parts of the lungs in order to meet the greater need of breath and the breathing muscles must

be forced into and practised in an exertion not only regular but also great. It must, however, be remembered that water presses on the thorax more than air would, the extra effort is small for each single breath, but large in sum total. Moreover, the vigorous movement in swimming quickens the action of the heart; the circulation of the blood is thereby actively and steadily kept up.

If properly conducted and intelligently carried out swimming may be made to exercise nearly all the great muscles of the body as well as of those of the lungs and to exercise them in a very short time. There is an enormous force expended with comparatively little fatigue on account of the bracing influence of water. As an individual exercise swimming affects both the sides of the body equally and encourages independence. Moreover, it gives an advantage of scenery, of the non-dusty air and of the ozone bearing breeze breathed in very freely on account of exertion.

Swimming may be made as much a team game as any other games our children play. Relay races in water may be arranged on the same plan as those in land. Games like water polo are fine lessons on discipline, in co-operation working not for self but for a whole of which one forms only a part. The danger of a single competition and individual display of skill and strength can thus be minimised.

The moral side in swimming must never be forgotten. By keeping the body clean and by invigorating the action of the heart with pure air it indirectly improves the nobler side of our heart. The team game and the life-saving impulse have a direct bearing on character. Nothing could be more virtuous in this world than to risk one's life for the sake of others and that without any idea of self-gain.

APPENDIX B.

Boxing.

The golden age of this exercise as well as the sister art of fencing belongs to the ancient world and to the Greeks. Amongst the mighty warriors whose names Homer immortalizes is Polydectes who was good with his fists. Polydectes, better known as Pollux, was not of the assailants of Troy, but he was the twin brother of Helen who was still in the prime of life even when Troy was sacked. His name is inseparably connected in the traditions both of Greece and Rome with the art and practice of boxing, and he was the *pater saint*, together with his twin brother Castor, of all the public games. In the mythologic and legendary history of the old world boxing finds a large and honourable place. In Ramayana the giant brother of the great Ravana used his fist in killing his enemies. The Greek god Apollo, besides his skill with the bow, was certainly good with his fists; and several of the sons of Zeus by mortal mothers were excellent bruisers. Neptune, god of the sea, was the father of one Amycus, king of the Bebrycians and progenitor of a race of fighting men. This great man was accustomed to challenge strangers who visited his dominions to put the gloves on with him; and no one appears to have escaped death at his hands until Pollux took up the customary challenge and paid off the tyrant in his own coin.

In the more western part of the old world, Sicily was for a time the head-quarters of the noble art of self-defence, and Eryx made himself the lord of the people in somewhat the same way as Amycus over the Bebrycians. His gloves still stained with

blood were shown in the next generation to a degenerate race which was appalled at their size and formidable aspect.

It was the custom all over the world to celebrate the funerals of defunct kings and great men by displays of athletic sports. And this fashion still survives in full force in less civilised countries of south-east Asia. At the cremation of the last king of Siam, a field was reserved and surrounded by lines of troops for the exhibition of quarter-staff matches and specially of boxing contests.

From boxing in the classical age we must come down at one leap to the present age. There is, of course, no doubt that in the interval the use of fists was common in many countries in almost all parts of the world. While the practice of the Savate, in which the feet as well as the hands are used, was growing up in France, an exactly similar style of boxing was being separately developed in the remote countries between India and China.

Once recognize the idea of personal contest for purposes of sport as opposed to purposes of actual destruction, and the fist becomes a material weapon more readily suitable for deciding a doubtful claim than any other. Once admit that men had better settle their differences by temporarily disabling one another than by killing outright and it found that contests with the unarmed hands are the fairest and readiest tests of rival merit.

Coming to the realm of our school work we may say that every healthy boy must be taught boxing at adolescence if not before. No doubt, the prize-ring is degrading and brutal, but the spirit of personal contest must be so made use of as to enable the educators to devise modes of pedagogic utilization of the immense store of interest it generates. At its best, boxing is indeed a manly art, a superb school for quickness of eye and hand, decision, force of will and self-control. The moment this is lost stinging punishment follows. Hence it is the surest of all

cures for excessive irascibility and has been found to have a most beneficial effect upon a peevish or unmanly disposition. We are fully conscious that the difficulties we have to face to eliminate boxing from its evil associations and to introduce it into our schools, are very great; but we are sure from both personal experience and observation that they are after all not unmanageable.

However, without insisting further on its utility we may briefly say that boxing is a capital exercise for our schoolboys with this advantage over fencing or lathi that there is no padding of the body or covering up the head with mask or helmet. All that are required are two pairs of boxing gloves.

APPENDIX C.

Wrestling.

Wrestling is a form of personal encounter which in antiquity reached a very high development. The Indians, the Japanese and the Greeks regarded wrestling as their national exercise and in its golden days the competitors thought it worth their while to receive training for months before entering the lists of wrestlers. The victor not only became a hero amongst his fellow athletes and the common people, but was feted by the government of his native state upon which he was supposed to have conferred a very real honour and glory. He returned in a sort of triumphal procession to his own city: privileges and immunities were decreed to him and in some state his statue was allowed to be placed in the most important temple.

Wrestling is still a most favourite of the Indian athletics, its popularity being perhaps due to the superiority of the Indian wrestlers in the world contest. The first Indian wrestler who went to Europe was Gulam of Bengal and he easily beat all his opponents. After Gulam the championship was held by a Punjabi youth, afterwards the famous Kikersingh, the Sitare Hind of the Punjab. Kiker was perhaps the heaviest man the world has ever seen, having been 9 mounds or about 740 pounds in weight. In 1908 a young Punjabi wrestler known as Ganna went to Europe, beat the famous Russian wrestler and the world-renowned American athlete Dr. Roller of the United States. The great world war has apparently put a stop to such contests and it is now rapidly forgotten all over India.

The chief enemies of the art are often those who should be most in its favour, i. e., the school masters and the instructors at Akhara (gymnasium). Both of them feel an exaggerated dread of broken bones amongst their charges and do their best to prohibit or discredit a sport which they think may cause any unpleasantness between them and the parents or the guardians of their pupils. As a matter of fact, if a properly padded or sandy place be provided in the school field for wrestling, there would be very little danger of any casualties. The education authorities should, however, see that the children should have short contests where agility and skill are more valued than strength.

Wrestling is certainly a most primitive type of the struggle of unarmed and unprotected man with man; but purged of its barbarity and properly subjected to rules, it cultivates more kinds of movements than any other form—for limbs, trunk, neck, hands, feet and all in the upright and in every prone position. It too has its manual of feints, holds, tricks and specialties and calls out wariness, quickness, strength and shiftiness. Victory need involve no cruelty or even pain to the vanquished. The very closeness of body to body, emphasizing flexor rather than extensor arm muscles, imparts to it a peculiar tone, gives it a vast variety of possible activities, developing many alternatives at every stage and tempts to many undiscovered forms of permanent *mayhem*. As a school of posture for art its varieties are extremely manifold, for it contains every kind of emphasis on of every part and calls out every muscle group and attitude of human body; hence its training in school will be most beneficial to the boys and it is certainly calculated to remove as quickly as anything that stiffness of joints and awkwardness of body which is so common amongst our youths in these days. Besides this there is nothing perhaps better as a test of endurance than a well matched bout in the wrestling arena. It is a

pity that our universities and our high schools do not make efforts to encourage wrestling in a moderate way.

Excessive keenness in wrestling must be discouraged and the contests should be so guided and refereed that accidents may not be common. In no case should the children be allowed to *dun* and *baithak* to make their body strong for wrestling. These two Indian exercises tend, when carried to excess, to produce big muscles after the manner of a heavy cart horse. Moreover, they soon become monotonous and lose their educative value.

APPENDIX D.

Ju-Jitsu.

Ju-jitsu, when literally interpreted it means "br-usele break-ing", is the Japanese system of physical training. From the very earliest period of antiquity there lived in Japan a minor class of nobles corresponding to our Kshatryas who were responsible for the defence of the empire. These are known as Samurai. Very similar to Hindu caste laws every member of the Samurai might marry with propriety into a family of superior nobility. Any one who married beneath his caste was summarily degraded. Thus the rank went on by heredity. Every son of the Samurai, unless he disgraced himself, kept his caste and took up the profession of arms. The comparatively few weaklings among these people retained their caste, but did not marry.

Like the Spartans the Samurai had servants to carry the luggage during a war. The Samurai would only carry the sword. It was considered utterly undignified for a Samurai to perform any toil outside of that connected with fighting, or with learning and preparing to fight. As a consequence it came about that the Samurai spent much of their idle time in taking athletic exercises. Like Kshatryas sword play and hunting came first of all ; but running, leaping and wrestling also took up much of the time of these Japanese knights. The active outdoor life combined with frugal sensible diet made these people very powerful men indeed.

The great enthusiasm of the Japanese in the physical development of their race gradually gave birth to the science now known all over the world as Ju-jitsu.

nothing to give freshness and interest to movements given with regimental precision. Nothing is left to personal initiative; the outlines are definite and not to be altered. In what way, then, can mental activity come in even if it were there to start with! And if it is not there the constant repetition of set movements, with no object but to increase the chest measure, can only induce dullness; whereas with Ju-jitsu there is such endless variety of movements and so much scope for personal initiative that success depends largely on how this is used; and the pupil whose impetuosity is a stumbling block will find that, without control, no single throw can be given by using blind strength; so that after weeks and months of training, the need of this control, gradually becomes a habit extending to other things more important and, above all, the control of self. The pupil with an apathetic nature finds that, unless he makes an effort to follow through the sequence of movements which occur in every throw, nothing results; so with each day the habit of rapid thought becomes stronger, and to all alike the fascination of the object in view incites renewed efforts, each according to the character, or rather that trait in the character, which causes the greatest hindrance to the attainment of the object in view.

The entire absence of strain is perhaps a most important feature of Ju-jitsu. The moment an exercise becomes painfully difficult, it is injurious. All the slow bending movements of arms and legs and body put a slow continued strain on certain muscles which have never experienced such stress before and thus become an unutterable bore to the pupil. Surely, the great aim of physical education should be a refreshment of both mind and body; and to a thinking intelligent being nothing which becomes purely mechanical could be kept up for long. Japanese claim that Ju-jitsu can never become monotonous, because each time one gives a throw it requires nearly the same amount of brain work and precision.

There is a branch of Ju-jitsu which may be regarded entirely as a game or sport, the *loose play* so to speak, in which two pupils work together, each trying to get throw according to the position of his opponent. But although each may work entirely independent of the other, there are certain rules which govern fair play, which must be adhered to. This branch necessitates knowledge of falling without risk of hurt; and the art of falling may be regarded as side branch of Ju-jitsu and may be left out. Another branch of Ju-jitsu is that in which the pupil is taught various ways of rendering an opponent powerless by the application of various locks and holds not necessitating throws. These likewise may be entirely omitted, as they have no part in the training of the body.

In conclusion, we may admit that we have not adequate information about the nature of this system of physical exercise, but the very fact, that the Japanese have retained it despite their introducing western system of education in their country, clearly indicates that Ju-jitsu has some special advantages; but how far it is applicable to India is a difficult problem to decide at present. Our continued effort to acquire requisite experience to Ju-jitsu will gradually reveal to us the possibility of introducing it to our schools in some modified form. We conclude, therefore, by quoting a few lines from Mrs. Roger Watts who has studied this branch of physical education in Japan :—

"Ju-jitsu is the very highest form of combined mental and physical training that has yet been devised; and so unconsciously and surely are the highest nerve-centres strengthened that the character itself is moulded through them: and courage, decision, endurance and, above all, a complete mental and physical control are the unfailing result of a thorough training in this most wonderful science".

APPENDIX E.

Dancing in School.

Dancing is an expression of pure play and is perhaps the most liberal of all forms of motor education. In very ancient times China and India ritualized it in the spring and made it a large part of the education of boys. The god Krishna danced with Radha and the maidens watched their dances. In Japan, in Ancient Rome, in Egypt and in the Greek Apollo cult it was a form of worship. The early Christian bishops, called Praesuls, led the sacred dance around the altar and only in 692 A.D. in the first time and finally 1617, was it forbidden in the church. Savages are nearly all great dancers imitating wild animals. Dances are the index of the heart and character of the people is often learnt from their dances, as the great Moliere has said the destiny of nations depends on them. "Right dancing" says Stanley Hall "can cadence the very soul, give nervous poise and control, bring harmony between basal and finer muscles, and also between feeling and intellect, body and mind. It can serve both as an awakener and a test of intelligence, predisposes the heart against vice, and turns the springs of character toward virtue."

It is certainly a great loss to our national happiness that dancing has been so much looked down for the last few centuries and is now only confined to public girls. Among the primitive peoples living in the hilly regions of India sword and war dances are still in vogue to some extent, but the majority of our countrymen have, unfortunately, got such a strange idea about dancing that we are afraid it cannot be introduced into our schools for some time at least. We, however, hope that when

our masses are educated they will be able to realise the following four important factors involved in dancing :—

The dances that have been selected involve many contractions of the large muscular masses of the body, thus having a profound effect upon respiration, circulation and nutrition. Because of the interest which children have in them, they are done with a vigour which is not given to exercises that are less engrossing. We know from our own experience that these large muscular movements as are done in dances could be carried on several times more without producing fatigue than when done as formal gymnastics. This relation of rhythmical exercise to fatigue seems to us of central importance.

An analysis of the movements of which the dances of the world are built shows that in the main they form an epitome of the neuro-muscular co-ordinations which have been necessary to the life of the race. The movements of the legs, the swaying of the body so that its centre of gravity is in constant relation to the point of support, the movements of the arms, as well as of those of the head—these follow long-inherited tendencies towards neuro-muscular co-ordinations which arose under the strain of survival.

For this reason, these neuro-muscular co-ordinations which are racially old fit in most extraordinarily with man's expressive life. The body as an agent of will and feeling does not use all possible muscular movements which have, during the past, expressed will and feeling and which, during adult life, are to be used. So if our dances really express an epitome of man's neuro-muscular history, we should prefer, on these biological grounds, our simplest country dance to those selected by our more advanced western brothers.

The feeling for beauty, as Ruskin has rightly observed, is vitally connected with balance. The body, as *Æsthetic* æsthetic material, is within the range of nearly all normal people. Relatively few individuals can learn to perform acceptably on musical instruments, to sing, to paint, to draw, or to work in plastic arts, but this sense of beauty in bodily movement, as shown in dancing, is sufficiently common so that for great majority of people this phase of art expression may be a genuine one. To great mass of people it has been the most available form of expression of any of the fine arts. Its relation to emotion is also more simple and direct than that of any of the other fine arts.

The social value of dancing must not be overlooked, but under the present state of affairs we fear it will *Social* take more than a generation to realise its importance. If co education in our school could be supported on social grounds there is no reason why mixed dancing could not be done. The time and our own experience in this direction will let us know how far it will be practicable for us to have dancing in the near future.

In conclusion, we may point out that dancing fails to correct *Conclusion* the faulty posture which is so frequently induced by the school desk. It does not tend towards the automatic strengthening of the muscles of the back to maintain the erect posture, nor does it tend particularly towards the acquirement of those neuro-muscular habits which are basal to good posture. We have, moreover, discovered that some of those dances which are the very best from the standard of physiology—strengthening the muscles of the waist and abdomen are quite impossible from the standpoint of our morals. So it must be evident that dancing in school can, at present, only be an useful adjunct of our system of physical exercise and not its main part.

APPENDIX F.

Physical Efficiency Test.

These are the days of bringing everything into mathematical accuracy. The tendency is to measure everything by arbitrary standards because personal judgment is often deceptive. The recent attempt of measuring general intelligence has led the promoters of physical education to measure, test and classify individuals in accordance with their physical efficiency. Like intelligence, physical efficiency depends on many factors, and hence no single test is applicable to either.

Again like intelligence, physical efficiency is understood by people in different ways. Some think that physical fitness is that which avoids sickness and postpones death. Some regard it as the power of doing heavy work. The professional coaches are anxious to know when their students can perform the *feats* and will judge the physical fitness with that standard.

Leaving aside these points of controversy about the true definition of physical fitness, we would like to say that as the body is inseparably connected with the mind, so is the physical efficiency closely related to mental and social ability. No individual is physically efficient, if he cannot properly perform all the duties essential for our civilised living. To be absolutely efficient, an individual should be in good health and according to the accepted standard of health should have no physical defects, have good health and habits, be possessed of endurance and strength, be well poised, endowed with mental and moral qualities and be capable of a certain definite neuromuscular control as exhibited by his reaction to certain motor-ability tests.

Manifestly, no one test or type of tests can adequately meet all these conditions. So any tests, to be truly physical efficiency tests, must also be in a position to point out an individual's physical deficiencies and there must be mental, social or physical reasons for them; hence a real test must show wherein the weakness lies. Failure to vault a buck at a certain height may be due to fear or timidity; it may be due to malnutrition or fatigue; or it may be due to lack of neuro-muscular control due to inactivity. Hence a true physical efficiency test should include a motor ability or proficiency test, but the latter alone is never a complete test of physical efficiency.

A number of years of research and experimenting in India will enable us to know what series of tests are necessary to make a standard in our physical fitness. A physical quotient like intelligence quotient is to be determined and for this we should divide physical age by the chronological age. But in determining physical age the work will be more different than the finding out of the mental age, for in working out motor tests for the adolescent and pre-adolescent boy, age as well as height, weight and mental development would be a factor. However, the value in any scoring system lies in establishing a certain "norm" above which an individual is more efficient, below which he is less efficient and educating individuals to know the value of the "norm". We are fully conscious of the complications involved in the physical efficiency tests, but we hope that if all our schools take the responsibilities of recording the results and studying them, it may not be long before we may be in a position to arrive at certain conclusions and then we can allot proper place to an individual child in his general and physical education.

Without entering into the technique of the tests, we can, here briefly, mention that like intelligence tests, physical efficiency tests will fall under two headings—the performance tests and

non-performance tests. The former requires the subject to do something in which the amount and character of the work is regarded as the measure of fitness. The latter requires the measurement of certain involuntary phenomena, the character of which is regarded as indicators of fitness. These non-performance tests, however, are influenced to a great extent by emotion, but seem to be at present more trustworthy than the performance tests; yet none of them is short and simple like intelligence tests and is less reliable.

It will be useful for our teachers to know a little of the evolution of physical efficiency tests. It was formerly the custom to measure the muscular power and general condition of a person by endurance tests such as weight lifting and running to exhaustion. These revealed maximum capacity for the particular kind of effort, but were not found trustworthy as health guides. Great performances were registered by men approaching nervous breakdown.

Later, muscular strength tests came into popularity. The dynamometer was used as a means of testing the power of certain groups of muscles and the result was employed as an index for estimating general condition.

Physiology then showed that physical exertion over-taxes the circulatory mechanism long before it exhausts the skeletal musculature; and that, while it is not easy to overwork the muscles, the heart can quite readily be overworked.

With this knowledge the next step was to endeavour to find the efficiency of the heart. Physicians then became interested, for they were anxious to determine the heart's reserve power. It is in this realm that we now find ourselves. As each test is presented, it is studied, and tried, but has been found wanting.

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In judging the value of a test, it is first necessary to learn just what it measures and then use it to measure only that particular thing. If muscular strength and heart capacity are synonymous with physical fitness, then we must search for a capacity test of one or both of these and standardize the finding so that they must be read in terms of fitness. But we are not yet in the position to claim that the power of the muscles and the heart alone set the limit to our capacity, for doing work varies according to the load which the body is required to carry. If the demand is such that its maximum power shall be exerted for a few minutes the answer is one thing, if the demand is such that the body should carry a load steadily day after day without a loss in efficiency and health, it is still another.

Many physicians judge heart and physical conditions by merely "sizing up" a patient after prescribing several doses of exercise. Satisfactory sizing up is only possible for the physician who has had a wide experience with a large variety of cases; it is of little use to the ordinary teacher of physical fitness.

If use is to be made of the condition of automatic nervous control, it appears that observations should be made on the pulse rate, arterial blood pressure, and respiration during rest, and after a mild form of exertion. The results must then be somewhat standardised in terms of physical fitness.

Finally, let us remind ourselves that there is a disposition to demand a good deal more from our human machinery than from an artificial one. The mechanic may easily measure the maximum load which his machine can carry; but how long this can be carried he does not undertake to state; a minimum endurance may be predicted but seldom the maximum. So must it be with the human machine. We have methods of measuring the maximum effort that may be tolerated for a short time, we can determine what constitutes an over-load, we can even deter-

mine the presence of poor adjustments in the machine but are unable to predict how long the human machine will be able to carry a normal load; we cannot even say how long it can carry a moderate overload. The best we can hope for at present is a measure for actual accomplishment and perfection of adjustment. There is, however, no prospect that we shall ever be able to determine the capacity for further development nor even the capacity to resist untoward experiences. Stupendous as our tasks are to standardise the physical efficiency tests, we should not give up our work in despair for there is perhaps no difficulty in this world which our persistent efforts and experience cannot overcome. We, therefore, advise our instructors and organizers of physical education to spare no labour in bringing these tests into as much a perfection as possible. To start with we recommend the thorough investigation of the following tests which are so popular in the United States of America.

1. Anthropometric non-performance tests.
 - (a) Pignet Test.
 - (b) Taylor Test.
2. Anthropometric performance tests.
 - (a) Dreyer Test.
 - (b) Sargent Test.
 - (c) Vital Capacity Test.

APPENDIX G.

List of Questions set at various Examinations.

1. What is the aim and object of Educational Gymnastics, and why is it desirable that it should be practised in addition to outdoor games?
2. Why is it so important that a room in which physical exercises are conducted should be particularly well ventilated and cool?
3. What are the symptoms of over-exertion and exhaustion, and what causes a man to grow pale after too prolonged a exercise?
4. How would you define exercise, and in what manner does it affect the muscular system?
5. Give a concise list of exercises you think suitable for a class of beginner.
6. What effects on the muscular system result from the neglect of proper exercise?
7. In conducting a course of Physical Training, state concisely some of the principal points to be observed.
8. What benefits, apart from those directly affecting the muscular system, result from properly directed healthy exercise?
9. In what positions should purely respiratory exercises be conducted, and how should they be executed?
10. What are the effects of proper respiratory exercises?

11. Describe some of the injurious positions into which children are liable to fall in school time.
12. What, in your opinion, is the proper duration of a Gymnastic lesson for children in elementary schools, and what the most suitable time in the day for conducting it? Give your reason for such opinion.
13. Explain the importance of bodily exercise. Why is rest necessary?
14. What are the effects of bodily exercise on the respiratory, circulatory and digestive apparatus?
15. Describe some of the effects of Physical Recreation on children.
16. Why should the young undergo systematized exercise in addition to playing athletic games?
17. What do you consider should be the duration of a lesson in physical exercises for children between the ages of ten and fifteen, and how many lessons a week should suffice?
18. About what temperature should the atmosphere of a room be during a lesson in physical exercises?
19. State some of the dangers to be guarded against in conducting a lesson of physical exercise.
20. What should be the duration (about) of a lesson in physical exercises for children between six and fourteen, and what to the best time of the day for conducting it?

21. State why it is injurious to take violent exercise shortly after a meal.
22. Give a definition of the term and explain the objects of Physical Education.
23. Explain shortly why children who are not well nourished should have less physical exercise than those who are properly fed.
24. Explain why it is considered better to exercise children attending elementary schools in free movements rather than on apparatus and mention the principal points to be observed in conducting a lesson in physical exercises.
25. State which you consider are the better exercises for a person who is overworked mentally : those demanding skill, or those of an automatic character : and give your reasons.
26. Explain why a period of repose is necessary after hard physical exertion, and what evil consequences would result if it were not taken.
27. What is the cause of the healthy glow upon a person's face during proper and moderate exercise, and how do you account for the pallor observable after prolonged or undue exertion, and of what is this latter indicative ?
28. What is the proper position that a person should assume when writing at a desk ? Mention some of the injurious positions into which children frequently fall while at lessons, and give a table of exercises suitable for a class of beginners.

29. Why is it imperative that in a room in which physical exercises are performed, the air should be cool and pure and the ventilation as perfect as possible; and what should be the temperature of the room ?
30. By what should the amount of exercise taken by an individual be regulated, and what are the symptoms of over-exertions.
31. How is the skin affected by exercise; what are its functions; and why is it so important that it should be kept clean ?
32. State briefly the effect upon the muscular system of the want of proper exercise, and explain why repose is necessary after hard bodily labour.
33. State briefly the results we seek to obtain by a course of systematized physical exercise, and upon what does the benefit therefrom chiefly depend ?
34. What effects has systematic exercise on the nervous system ?
35. What are the relative merits of indoor and outdoor exercises ?
36. What are the best times of day to take (a) food (b) exercise ?
37. What is the difference between air inspired and air expired ?
38. What is the effect of muscular exercises on the respiratory system ?
39. Describe the backbone and its movements. What are the uses of the curves in the spinal column ?

40. How is the erect position maintained in man ? What are the symptoms of muscular fatigue ?
41. What is the difference between venous and arterial blood ?
42. What are the main objects of a course of physical training in schools ? Do organised school games fulfil these objects better than other forms of physical exercise.
43. Give your views on the value of medical inspection. How would you arrange to have the inspection carried out ?
44. Give (a) the normal body temperature. (b) the normal pulse rate of school pupils. Why is it important that teachers should know these facts ?
45. Describe the respiratory system, explaining the importance of breathing through the nose. What are the chief causes of breathing through the mouth ?
46. In what ways are school excursions advantageous ? Describe what previous preparation you would give to the minds of your pupils for an excursion.
47. Discuss the scope and value of (1) organized games and (2) drill in schools. Indicate the value of inter-school matches.
48. Discuss the principles underlying the hygienic lighting of a school class-room.
49. In modern views on ventilation as much stress is laid on the need of the skin for fresh air as the need of the lungs. Explain why this is so, and state how you

would try to keep the air of the class-room in a condition suitable for healthy skin action.

50. What are the causes of mal-nutrition in school children? State the effects of mal-nutrition on their physical well-being and mental work, and your mode of dealing with a pupil to be suffering in this way.
51. Describe the process by which the temperature of the body is automatically regulated. Show how knowledge of the process determines hygienic clothing.
52. What are the conditions necessary for the healthy development of the skeletal system. Discuss the value of physical exercises as affecting such development.
53. If you were given the task of organising a programme of physical culture in your school, what general procedure would you follow and what type of exercise would you favour?
54. A recent survey of students in a certain University disclosed a high proportion of defective youths. Indicate the chief defects of Indian students and remedies which you consider necessary.
55. What improvements would you notice in the school?

57. On what grounds are Drill and Gymnastics made compulsory as a school-subject? Which is the best time for it and why? What precautions will you take in conducting a drill class?



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Drill and Gymnastics made com-
bined? Which is the best time
What precautions will you take
class?

